

TESTED DIFFERENCES OF THE PERFORMANCE OF TWO GROUPS OF EDUCATIONALLY
RETARDED PRISONERS IN THE UNITED STATES FEDERAL PENITENTIARY
ATLANTA, GEORGIA, 1958-1959

A THESIS
SUBMITTED TO THE FACULTY OF THE SCHOOL OF EDUCATION, ATLANTA UNIVERSITY
IN PARTIAL FULFILLMENT OF THE REQUIRMENTS FOR
THE DEGREE OF MASTER OF ARTS

BY
SARAH WASHINGTON RICHARDSON

SCHOOL OF EDUCATION

ATLANTA UNIVERSITY

AUGUST, 1959

R=ix P=97

28
36
No time

DEDICATION

To My Devoted Husband

And

Dr. Laurence Boyd

For

Their Inspiration, Interest

And

Encouragement

ACKNOWLEDGMENTS

The writer wishes to express appreciation and gratitude to the Warden, Mr. Fred T. Wilkinson and the Educational Department Staff of the United States Penitentiary, Atlanta, Georgia for making the Official Records of prisoners available for the research study. The writer wishes also to thank Mr. John O. Boone, Social Worker at the Penitentiary for cooperation given in collecting data for the research. Special thanks to Dr. Laurence Boyd, Advisor and Dr. L. Graves, Co-advisor, who gave much attention, interest and constructive criticism during the writing of this thesis.

S. W. R.

TABLE OF CONTENTS

	Page
DEDICATION	ii
ACKNOWLEDGMENTS	iii
LIST OF TABLES	
Chapter	
I. INTRODUCTION	1
Rationale	1
Evolution of the Problem	5
Contribution to Educational Thought and Practice	5
Statement of the Problem	6
Limitation and Scope of Study	6
Purpose of the Study	6
Definition of Terms	7
Locale and Research Design	7
Locale of Study	8
Method of Research	8
Description of the Subjects	9
Description of Instruments	10
Criterion of Reliability	10
Method of Procedure	10
Collection of Data	11
Review of Related Literature	11
Treatment of Criminals	12
Intelligence and Crime	12
Education and Crime	13
Theories of Educational Retardation	15
Theories of Achievement	15
Theories on Prison Education	16
Personality and Crime	16
Economics and Crime	17
Summary of Literature	18
II. PRESENTATION AND ANALYSIS OF DATA	20
Organization and Treatment of Data	20

TABLE OF CONTENTS (Continued)

Chapter	Page
The Indices of Standardized Test Scores	21
Introductory Statement	21
Stanford Achievement Test (Initial Testing)	21
Stanford Achievement Test (Final Testing)	23
The United States Health Service	
Classification Test	23
The Indices of the Personnel Inventory Record	25
Introductory Statement	25
Age Entering School	25
Age Leaving School	28
Violations of Institutional Regulations	33
Medical Treatment	37
Psychological Treatment	39
Environment; Slum Area	39
Size of Town	40
Broken Homes	41
Marital Status	42
Occupation Prior to Prison	43
Juvenile Record	46
Adult Record	47
Types of Crime	48
The Correspondence of Types of Crimes	
With Intelligence	50
The Indices of the Significant Differences	53
Introductory Statement	53
The "t" Ratio on the Stanford Achievement Test	
(Initial Testing)	53
The "t" Ratio on the Stanford Achievement Test	54
(Final Testing)	
The "t" Ratio on the Intelligence Quotients	
United States Health Service Classification	
Test	56
The "t" Ratio on Age Entering School Data	57
The "t" Ratio on the Age Leaving School Data	58
The "t" Ratio on the Grade Completed Data	59
The "t" Ratio on the Job Changes in Prison Data	60
The "t" Ratio on the Violation of Institution	
Regulations Data	61
The "t" Ratio on the Times in Punishment Quarters	62
The "t" Ratio on the Number of Medical	
Treatments Data	63
Resume of Findings	64
Interpretative Summaries	65

TABLE OF CONTENTS (Continued)

Chapter	Page
III. SUMMARY AND CONCLUSIONS	74
Rationale	74
Evolution of this Problem	74
Contribution to Educational Thought and Practice	78
Statement of the Problem	79
Limitation and Scope of Study	79
Purpose of the Study	79
Definition of Terms	80
Locale and Research Design	80
Locale of Study	81
Method of Research	81
Description of Subjects	82
Description of Instruments	83
Criterion of Reliability	83
Method of Procedure	83
Collection of Data	84
Summary of Literature	84
Basic Findings	85
Conclusions	93
Implications	94
Recommendations	94
BIBLIOGRAPHY	95
APPENDIX	98
Specimen of Tests	
(a) U. S. Public Health Service Classification Test	
(b) Stanford Achievement Test (Primary, Elementary and Advanced Batteries)	

LIST OF TABLES

Table	Page
1. Grade-Placement on the Stanford Achievement Test (Initial Testing)	22
2. Grade-Placement on the Stanford Achievement Test (Final Testing)	24
3. Intelligence Quotients on the United States Health Service Classification Test	26
4. Age Entering School From Personnel Inventory Record . . .	27
5. Age Leaving School From Personnel Inventory Record . . .	31
6. Grade Completed From the Personnel Inventory Record . . .	31
7. Job Changes in Prison From the Personnel Inventory Record	32
8. Violations of Institutional Regulations From the Personnel Inventory Record	34
9. Times in Punishment Quarters from the Personnel Inventory Record	36
10. Number of Medical Treatments From the Personnel Inventory Record	38
11. Number of Psychological Treatments From Personnel Inventory Record	40
12. Environment, Slum Area Yes - No Responses From Personnel Inventory Record	41
13. Size of Town Prisoners Grew Up in Data From Personnel Inventory Record	42
14. Broken Homes Data From Personnel Inventory Record	43
15. Marital Status Data From Personnel Inventory Record . . .	44
16. Occupation Prior to Prison Data From Personnel Inventory Record	45

LIST OF TABLES (CONTINUED)

Table	Page
17. Juvenile Record Data From the Personnel Inventory Record . . .	47
18. Adult Record Data From the Personnel Inventory Record . . .	48
19. Types of Crime Committed from Personnel Inventory Record . . .	49
20. Types of Crime with Data on Intelligence for the Subjects of This Research	51
21. Significant Differences Between Grade-Placement on the Stanford Achievement Test (Initial Testing)	54
22. Significant Differences Between Grade-Placement on the Stanford Achievement Test (Final Testing)	55
23. Significant Difference Between Intelligence Quotients From the United States Health Service Classification Test	56
24. Significant Difference Between Age Entering School Data From the Personnel Inventory Record	57
25. Significant Difference Between Age Leaving School Data From the Personnel Inventory Record	58
26. Significant Difference Between Grade Completed Data From the Personnel Inventory Record	59
27. Significant Difference Between Job Changes in Prison Data from the Personnel Inventory Record	60
28. Significant Difference Between Violations of Institution Regulations Data From the Personnel Inventory Record	61
29. Significant Difference Between Times in Punishment Quarters Data From the Personnel Inventory Record	62
30. Significant Differences Between Number of Medical Treatments Data From the Personnel Inventory Record	64

LIST OF TABLES (Continued)

Table	Page
31. Summary of Basic Data From the Standardized Test and Personnel Inventory Record for the Successful and Unsuccessful Prisoners	66
32. Summary of Basic Data for Total Group and Significant Differences for Successful and Unsuccessful Prisoners. .	69
33. Summary of Yes - No Responses From the Personnel Inventory Record	71
34. Summary of Background Data From the Personnel Inventory Record	72
35. Types of Crime Data on Intelligence for the Subjects of This Research	73

CHAPTER I

INTRODUCTION

Rationale.--For as long as man has inhabited the earth there have been occasions, with social organizations, when his conflict with law, custom and mores resulted in some form of expiation. Treatment and/or punishment was carried out within the demands of a utilitarian background. Goodness was based on its usefulness to the group. Usually concerted action would occur only when the greatest happiness to the greatest number was threatened. It appears that this attitude of expiation and utilitarianism is basic to the offenders.

It was observed that primitive punishment was inflicted either to remove the strain of impurity from society or to prevent a supernatural being from taking revenge on the tribe.¹ This attitude is reflected in Biblical history, although somewhat mythic, when Adam and Eve were exiled. Likewise, they ostracised Cain for murdering his brother.

From the beginning of time the punishment for the breaking of taboos was carried out with great severity. "In primitive society there is no written law...Nevertheless, it has a method of enforcing sanctioned modes of conduct which is probably more powerful and vigilant than any

¹ Harry Elmer Barnes, The Story of Punishment (Boston: The Stratford Company, 1950), p. 38.

written code which man has ever devised. This practically omnipotent force is custom."¹

Barnes succinctly desolves this over-awing and excoriating punishment of the offender to social custom, thusly:

The punishment of the breaking of taboos, particularly that against endogamy, and of witch-craft, was, as might be expected, carried out with great severity. The whole group (tribe or village), including all the neighboring clans or the whole village, turned out to eliminate the criminal with the greatest expedition. The offender might be hacked to pieces in the frenzy which overcomes the mob or otherwise brutally but surely exterminated. He might even be eaten. The wife and children of the witch or sorcerer were also killed and his house burned. All taint was thus removed.²

The coward suffered gross humiliation or corporal punishment usually, rather than death. Exile was very frequently ordered.³ Thus did society in the earlier days deal with those who threatened the security of the group.

"To punish or repress crimes of a private nature the earliest society had no developed organs--so it was left to be settled by private means."⁴ In other words, the disposition of private grievances were purely personal matters. This attitude, of course, prevailed to some extent even to modern times. It may be reflected in European and early American Duels.

¹ Barnes, op. cit., p. 38.

² Ibid.

³ Ibid., p. 43 ff.

⁴ Ibid.

From this early beginning, the treatment of offenders evolved, concomitantly, through flogging, mutilation, branding, stocks and pillory, and other sundry punishments. And this is not meant to imply that some of these means are not still used in isolated situations.¹

The most important figure in arousing British interest in the atrocious treatment of criminals in the latter half of the eighteenth century was John Howard (1726-1791).² Howard, along with, Elizabeth Fry and Jeremy Bentham, in England, and the Philadelphia Quakers, took the lead in prison reform. A great name in penal reform is that of the Italian, Beccaria, whose work on Crime and Punishments, appeared in 1774.³ The general abolition of torture and of such punishments as burning alive, breaking on the wheel, and drawing and quartering followed Beccaria's work.⁴ The British criminal code was completely transformed between 1820 and 1861. During this period the death penalty was abolished for two hundred and twenty-two offenses, including the death penalty for stealing five shillings worth of goods from a shop.⁵

¹ Harry E. Barnes and Negley K. Teeters, New Horizons in Criminology (New York: Prentice Hall, Incorporated, 1946), p. 11.

² Hutton Webster, History of Mankind (Boston: D. C. Heath and Company, 1928), p. 625.

³ Ibid., p. 625 ff.

⁴ Barnes, op. cit., p. 102.

⁵ Ibid., p. 111.

Reform of the criminal code in America had its germinal center in Pennsylvania at the close of the eighteenth century. The innovations in Pennsylvania stimulated other states to follow her example, and within a half century following the Declaration of Independence all of the American states had abolished the older and barbarious methods of corporal punishment and substituted imprisonment therefor. ¹

The reform of criminal law was concomitant with the arise and development of prisons. The establishment of the Pennsylvania and Auburn Systems of prison discipline in the first quarter of the nineteenth century attracted world-wide interest, and in 1832 William Crawford (1788-1847) was sent to America to investigate and report on these American prison systems. ² It was a struggle between these two systems which colored the whole development of prison discipline during the first half of the nineteenth century. The Pennsylvania System involved the use of congregate confinement and proved a failure, but, stimulated the Auburn System's solitary confinement, which appeared to promise nothing better. ³ Then the Elmira Reformatory system developed. It was in this system that the first concern was manifested for the observation of the prisoner on the road to ultimate reformation. Reformation rather than either retaliation or deterrence was the plan.

"The Federal system of penal institutions, an excellent example of a planned and well-integrated concept of penal philosophy, reasonably

¹ Webster, op. cit.

² Barnes, op. cit., p. 108.

³ Ibid., p. 136.

progressive in nature, serves as a pattern for the states in planning or revamping their system.¹ The acid test of a prison is its program and philosophy. A program without a philosophy and without definite objectives is empty of value...."² It is hoped that this study will have significance, in some small manner, for this widespread search for more adequate prison programs.

Evolution of this Problem.--It was observed that at the Atlanta Federal Penitentiary, compulsory school was recently (October 1, 1954) started for all prisoners, with certain limitations, who tested below the fifth-grade level of achievement. It is indicated that many of these men make remarkable progress, while others are very unsuccessful in the program. This proposed problem of research stems from an interest in obtaining a composite and objective appraisal of the worthwhileness of this educational program within the overall rehabilitation program of the prisoners.

Contribution to Educational Thought and Practice.--The writer hopes that the study will have value for the institution in having its relatively new program evaluated. Secondly, it is hoped that some of the findings will have value for the prisoners and for their educational rehabilitation. Next, it is hoped that the study will contribute to others who may plan a similar program. And finally, it is hoped that it will have value to the field of education; and, particularly, to the theories on educational retardation; attitudes toward forcing persons

¹ Barnes and Teeters, op. cit., p. 674.

² James V. Bennett, "Evaluating a Prison," The Annals of the American Academy of Political and Social Science (May, 1954), pp. 45-46.

to attend school.

Statement of the Problem.--The problem involved in this study was to determine the differences, if any, between one group of educationally retarded prisoners who made poor progress and another group who made good progress in the Compulsory School Program at the United States Penitentiary, Atlanta, Georgia, 1954-1958.

Limitation and Scope of Study.--The primary concern of this research was to identify the indices of central tendency and variability for intelligence and school achievement for a group of unsuccessful prison school students with reference to whatever significant differences which might be observed between the performance of these two groups on the variables of intelligence, achievement, and in other institutional relationships. The study is necessarily limited to the identification of any differences discovered--with no attempt to analyze the causative factors involved--with the interpretation restricted to the identification of educational implications.

Purpose of the Study.--The overall/major purpose of this study was: (a) to ascertain the differences, if any, in school achievement, personal adjustment, and family background between two groups of prisoners who were forced to attend the Prison School in order to raise their educational status; and ultimately designated "successful" and unsuccessful" groups with reference to their achievement; and (b) to obtain the levels of intelligence and achievement of the two groups of prisoners with reference to selected categories of crime.

More specifically, the purposes of this research were as follows:

1. To determine the measures of central tendency and

variability of intelligence of the respective groups as measured by the United States Health Service Classification Test.

2. To determine the measures of central tendency and variability in academic achievement of the respective groups as measured by the Stanford Achievement Test.
3. To determine the measures of central tendency and variability of selected aspects of the personal and social background of the respective groups as measured by the "ratings" on the Personnel Inventory Record.
4. To determine the measures of central tendency and variability in the "institutional-adjustment" of the respective groups as measured by the "ratings" on the Personnel Inventory Record.
5. To obtain the levels of intelligence of the respective groups classified as to crime commitment record as measured by the United States Health Service Classification Test.
6. To formulate any significant implications for educational theory and practice as may be derived from the analysis and interpretation of the data.

Definition of Terms.---Significant terms used throughout this study

are characterized as follows:

1. "Offense" as used in this study refers to the deed or act committed by the subject which resulted in his conviction.
2. "Criminal," "prisoner," "subject," or "inmate," as used synonymously in this study refer to any one who has been convicted of a crime by the Federal Courts.
3. "Intelligence," as was used in this study refers to the traits of mental development as measured by the United States Public Health Service Classification Test.
4. "Achievement," as was used in this study refers to the level of school accomplishment as measured by the Stanford Achievement Test (Primary, Elementary, Intermediate and Advanced Batteries).
5. "Retardation," as was used in this study refers to the phenomenon of either slow progress through the school grades or school failure.

Locale and Research Design.---The significant aspects of the locale

and research design of this study are characterized below.

Locale of Study.--This study was conducted at the United States Federal Penitentiary, Atlanta, Georgia, during the scholastic year of 1958-1959. This institution plays a major role in the Federal Prison System's responsibility for custody, care, and treatment of the thousands of persons convicted and sentenced here for violations of Federal laws. It is one of thirty varied types of correctional institutions operated by the Federal Bureau of Prisons. It was authorized by Congress in 1891 but construction was delayed several years because of lack of funds. It received its first prisoners in 1902, according to Bureau of Prison Publication, Department of Justice, July 16, 1951. During this year the population reached more than twenty-seven hundred men. It was built to house only two thousand prisoners.

This institution is similar in many ways to any ordinary community. Its Power Plant and Electric Generating equipment, its large industries (Cotton Factory), Laundry, Library, Maintenance Shops, Farms, Dairy, Kitchen, Dining Rooms, Bakery School, Hospital, Business Office, Recreation Area, Chapel, Living Quarters, Shoe Repair Shop, and Garages are elements common to every community. There are about twenty-seven hundred prisoners and four hundred and thirteen officers and staff members who supervise and direct the work of the prison.

The period of this study began in July of 1958, ran through the summer months and the regular 1958-1959 school year and closed during the month of July of the 1959 school summer quarter.

Method of Research.--The Descriptive-Survey Method of research, employing techniques of test scores, inventory ratings, official records,

and the statistical analysis thereof, was used to gather, analyze, and interpret the data for this study.

Description of Subjects.--The subjects used in this study were one hundred twenty (120) prisoners who were compelled to attend school at the Atlanta Federal Penitentiary because Achievement test results, ascertained on admission to this institution, revealed that their grade-placement was below 5.0; sixty of these subjects were considered unsuccessful because they did not achieve the goal of 5.0 set by the Penitentiary staff. The remaining sixty were considered successful because they had achieved a grade level of 5.0 or more. It was indicated that an average of two hundred forty (240) subjects per year have participated in this program over the past four school years. Fifteen successful subjects and fifteen unsuccessful subjects were selected at random from each of the four years described. These were male prisoners from every section of the United States. Forty-six of these men had rural backgrounds, forty were reared in urban areas, twenty-one were reared in small towns, eight were reared in small cities and the community background of five were unknown. Seventeen were products of slum areas. The I. Q. of these subjects ranged from a low of sixty-one to a high of one hundred eighteen, according to the United States Public Health Service Test. These subjects had committed the following Federal offenses: Robbery, Interstate transportation of stolen property, internal revenue, liquor laws, fraud, forgery, violating the fire arms act, narcotics, kidnapping, military offenses, violating the Mann Act, counterfeiting, mail theft, and rape (Military or on Government reservation). The chronological ages ranged from a low of twenty-six

years to a high of fifty-eight years.

Description of Instruments.--The instruments used to gather the data for this study are identified below.

1. The Stanford Achievement Test, primary, elementary, and in some cases intermediate and advanced batteries, Forms J. L., 1954 edition was used. These tests were devised by Truman Kelley, Richard Madden, Erick Gardner, Lewis Terman and Biles Ruch. They were designed to measure the important knowledges, skills, and understandings commonly accepted as desirable outcomes of the major branches of elementary curriculum.
2. The United States Health Service Classification Test (Federal Penal and Correctional Institutions). This is a non-verbal test of non-verbal intelligence, administered to groups, by the Education Department staff, and interpreted by the Clinical Psychologist.
3. A questionnaire which was designed and used in the relationship with the personal interview in order to secure certain data.
4. A specially designed schedule consisted of necessary categories to cover various aspects of the subjects' socio-economic status and information concerning institutional adjustment.
5. Official confidential records, which included a variety of information. The information with which we will be mainly concerned is the social case history. Official Court records and information concerning institutional adjustment including discipline, job changes, visiting and correspondence records.

Criterion of Reliability.--The criterion of reliability for the statistics was established as a Fisher's "t" of 2.58 at one per cent level of confidence and 118 degrees of freedom.

Method of Procedure.--The procedural steps in conducting this research were as follows:

1. The related literature pertinent to this study was reviewed, summarized, and presented in the finished thesis.
2. The proper permission to conduct the study was secured from proper administration sources.
3. The official records of one hundred and twenty (120) prisoners involved in this study were studied for pertinent data on their

achievement, background and prison activities.

4. The data derived from tests, official records, was assembled in appropriate tables and in turn, statistically treated.
5. The necessary statistical measures computed were the mean, standard deviation, standard error of the mean, the standard errors of the differences between the two means, and Fisher's "t".
6. The formulation of the Findings, Conclusions, Implications, and Recommendations, stemming from the analysis and interpretation for incorporation in the finished thesis copy.

Collection of Data.--Permission was acquired from the Warden of the United States Penitentiary, Atlanta, Georgia, to do this research on the educational program established for prisoners whose grade level was below 5.0. The Warden made available certain official records. These records included information concerning the prisoners community and prison history. The educational records included Stanford Achievement Test results on all prisoners. A questionnaire was designed and used in relationship with the personal interview with the Supervisor of education and other Staff members concerning the organization and operation of the department. A schedule was designed including categories concerning intelligent achievement, family background, personal background, institutional adjustment and criminal history. The Institution was visited on ten occasions and data was transferred from the official records to the schedule.

Review of Related Literature.--Summarily, the literature pertinent to this study has been organized, for presentation under the eight topics listed below and will be presented in the following order:

1. Treatment of Criminals.
2. Intelligence and Crime.
3. Education and Crime.

4. Theories of Educational Retardation.
5. Theories of Achievement.
6. Theories on Prison Education.
7. Personality and Crime.
8. Economics and Crime

Treatment of Criminals.--George B. Vold's observations concerning the treatment of criminals indicated that since early times there has been increasingly general acceptance, in verbal expression at least, of reformation as the desired product of imprisonment. He said that if the prisons fail to reform, then it follows that present penal systems as a whole, fail in any major accomplishment of its desired purpose and objectives.¹

Authorities agree that present day emphasis on the need for the rehabilitation of criminals has been the central theme for the implementation of whatever treatment our society has sought to carry out. Harry E. Barnes feels that modern criminology supplants the old slogan of making the punishment fit the crime by the new objectives of making the treatment fit the criminal.²

Intelligence and Crime.--Clara F. Chassell states that "...low intelligence is among the most important factors conditioning the tendency towards dishonesty."³

¹George B. Vold, "Does the Prison Reform?" The Annals (Philadelphia: The American Academy of Political and Social Science, May, 1954), p.43.

²Harry Barnes, The Story of Punishment (Boston: The Stratford Company, 1930), p. 265.

³Clara Chassell, The Relationship Between Morality and Intellect (New York: Teachers College, Columbia University, 1935), p. 480.

Furthermore, Sutherland observed that it is no longer to be denied that the greatest single cause of delinquency and crime is low grade mentality.¹

Intelligence strictly defined, is the power of understanding and does not include the power of memory, according to Harmes,² and is only one of the powers of our mental life and only one form of expression of our power of thinking.

Intelligence, one very important aspect of a child's personality, plays a significant role in the manner in which he adjusts to his environment. The dull child must adjust on a lower level of ability. If he is forced to attempt tasks which are too difficult, and complicated for him he will become discouraged, give up and develop feelings of inferiority or a variety of compensating attitudes. These same tasks may prove too easy for a bright child, and lead him into another kind of maladjustment. He may become lazy or dependent on others, or else he may restlessly seek mental stimulation or entertainment, making himself a nuisance in school or elsewhere.³

Education and Crime.--Austin MacCormic pin-points the importance of education in these words: "Education is not the formula for the solution

¹ C. H. Sutherland, op. cit., p. 104.

² E. Harmes, Handbook of Child Guidance (New York: Childcore Publication, 1947), p. 115.

³ Nancy Bayley, "Mental and Emotional Growth and Personality Adjustment," Mental Hygiene and Modern Education (New York: Farrar and Rinehart, Incorporated), p. 37.

of crime for which society is so restlessly and so fruitlessly seeking-- fruitlessly because no single formula exists. Education is not the universal solvent, although it is an excellent catalyzer. Education of prisoners offers one of the very real hopes for their rehabilitation.¹

Education is a vital force in the reformation of fallen men. Its tendency is to quicken the intellect, inspire and afford a healthful substitute for low and vicious amusements. Education in its broadest sense is therefore, a matter of primary importance in prisons.²

According to Sutherland crime decreases with the amount of formal education. In 1923, 4.6 per cent of the population between the ages of fifteen and thirty-five were illiterate. While 10.7 per cent of all prisoners within this age group were illiterate.³

Education in its broadest sense, inevitably accompanies growth, taking place in the organism as a result of the child's reaction or adaptation to his environment. The habits a child forms and the behavior he exhibits whether they conform to the established social codes or not, are the products of this education.⁴

¹ Austin MacCormic, Education of Adult Prisoners (New York: The National Society of Penal Information, Incorporated, 1931), p. 1.

² Proceedings of the Eighty-Sixth Annual Congress of Correction, The American Correction Association (Los Angeles: August, 1956), p. 14.

³ E. H. Sutherland, Principles of Criminology (Chicago: J. P. Lippencott Company, 1934), p. 196.

⁴ Andrew W. Brown, "Conduct Disorders and Delinquency," Mental Hygiene in Education (New York: Farrar and Rinehart, Incorporated, 1953), p. 44.

Theories of Educational Retardation.--Sheldon and Glueck defines retardation as follows: "By retardation is meant slow progress through the grades resulting from being held back, that is from school failure."¹ These scholars feel that experience of repeated failure is one of the most serious threats to emotional integrity. Studies of inmates in Correctional Institutions indicate school retardations as the factor most frequently associated with delinquency.²

Grace Arthur discusses the chronic repeater thusly: "The Chronic repeater is a maladjusted individual in need of clinical study and highly specialized treatment. The school system that produces many such individuals has need to question its value to the community which it purports to serve."³

Theories of Achievement.--Betts asserts that "the teacher's first concern in dealing with pupils is to determine their need in terms of their level of achievement. Problems of achievement which involve just the right amount of aspiration and difficulty are essential to the development of both intelligence and character."⁴

¹ Sheldon and Glueck, Preventing Crime (New York: McGraw-Hill Book Company, Incorporated, 1936), p. 108.

² Ibid., p. 108.

³ Grace Arthur, "A Study of Achievement of Sixty Grade Repeaters as Compared with that of Non-Repeaters of the Same Age," Journal of Experimental Education (December, 1936), 203-205.

⁴ Witty and Skinner, Mental Hygiene in Modern Education (New York: Farrar and Rinehart, Incorporated, 1939), p. 218.

Achievement is what one does regardless of her capabilities.¹

Theories on Prison Education.--The problem of prison education is essentially a problem of socialization. This means, first, a modification of special interests and attitudes.²

Prison education should be individualized, adultized, made broadly inclusive in its offerings and sparing in its use of compulsion.³

Prison education should include the fundamental academic training, vocational training, health education, cultural education and social education.⁴

The most effective agency in advancing the cause of the reformation of the criminal has not been special reward for good behavior, but rather the education of the prisoner for normal life after his release.⁵

Personality and Crime.--By definition personality problems are those behavior problems which are indicative of a lack of integration among the many factors which together make up the adequate personality. What specific problems an adolescent faces depends upon what personality needs are met by his environment.⁶

¹ Willis W. Clark, Manual of Directions (Los Angeles: 1950), p. 1.

² Sutherland, op. cit., p. 491.

³ MacCormic, Education of Adult Prisoners (New York: National Society of Penal Information, 1931), pp. 11-12.

⁴ Sutherland, op. cit., p. 493.

⁵ Barnes, op. cit., 213.

⁶ Witty and Skinner, op. cit., p. 227.

Personality difficulties sometimes arise because a child is aware of his intellectual defect.¹

Despite extensive research and many ingenious efforts to delimit them, there are no such entities as "delinquent" or "criminal" personalities.² "We often hear people speak of a well-balanced personality, or talk about the balancing factors of the personality. What do they have in mind?

They are referring to individuals who seem to have attained a reasonably satisfactory degree of equanimity and happiness in their adjustment to life. We envy their achievement of satisfaction, try to study how they have arrived at it, and when we think we have found a clue, attempt to use the recipe for ourselves. It does not often work on us, for the same reason that medicines and glasses prescribed for others are not likely to fit our needs."³

Economics and Crime.--The home broken by death, divorce or desertion has generally been believed to be an important reason for delinquency of the children.⁴

¹ M. A. Sherman, Mental Hygiene and Education (New York: Longmans, Green and Company, 1950), p. 45.

² J. Hunt, Personality and the Behavior Disorders (New York: The Ronald Press Company, 1944), p. 794.

³ E. L. Richards, Introduction to Psychobiology and Psychiatry (St. Louis: The C. V. Mosby Company, 1946), p. 48.

⁴ Sutherland, op. cit., p. 158.

These factors often cause economic stress. Elliott and Merrill,¹ observed that the extent to which economic conditions foster the development of the criminal as a person has never been entirely clear. However, an analysis of criminality in Germany disclosed that poverty, the food shortage, lack of clothing, all combined to make the depression the worst in history. The privation and resentment which engendered fostered a general increase in crime."

Summary of Literature.--A review of the related literature pertinent to this study is presented in the condensed general statements immediate to follow.

1. E. Harmes states that intelligence is only one of the powers of our mental life and only one form of expression of our power of thinking.
2. Barnes says what a prisoner becomes upon his release depends upon the success he achieves in his educational program.
3. MacCormic , states that prison education should be individualized and adultized. The prisoner should be considered primarily an adult in need of education and only secondarily as a criminal in need of reform.
4. According to Sutherland, the Problem of Prison education is essentially a problem of socialization.
5. Chassell states that low intelligence is among the most important factors conditioning the tendency toward dishonesty.
6. Sheldon and Glueck view retardation as slow progress through the grades resulting from being held back, from school failure.
7. According to one observation during the proceedings of the Eighty-Sixth Annual Congress of Correction, The American Correction Association, education is a vital force in the reformation of fallen men.
8. Sutherland reports that broken homes are an important factor

¹ Elliot and Merrill, Social Disorganization (New York: Harper and Brothers Publishers, 1934), p. 186

for delinquency.

9. Betts asserts that "the teacher's first concern in dealing with pupils is to determine their need in terms of level of achievement."
10. Sherman states that the intelligence of a child also influences the characteristic trait he develops.
11. Richards stated that satisfaction and achievement with approval by others bear a definite relation to inborn and acquired assets of an intellectual and emotional nature.

CHAPTER II

PRESENTATION AND ANALYSIS OF DATA

Organization and Treatment of Data.--The present chapter will present, analyze, and interpret the data pertinent to the major objectives of this research which was to compare achievement, intelligence, background and prison activities of the two groups of educationally retarded prisoners who made good progress and poor progress, respectively, in the compulsory school program at the United States Penitentiary, Atlanta, Georgia, 1954-1958. The group designated "successful" scored above a grade-placement of 5.0 on the Stanford Achievement Test (Final Testing) and the group designated "unsuccessful" scored below a grade-placement of 5.0 on this test.

The requisite data for the research were collected and organized for the purposes of analysis and interpretation under the following captions:

1. The Indices of Standardized Test Scores
2. The Indices of the Personnel Inventory Record
3. The Indices of the Significance of the Difference for groups
4. Interpretative Summations

The criteria for the reliability of the statistics on the various paired variables were (a) Fisher's "t" of significant differences at

118 degrees of freedom and the one per cent level of confidence, with a "t" value of 2.58; and (b) the accuracy and authenticity of the information on the Personnel Inventory Record.

The Indices of Standardized Test Scores

Introductory Statement.-- This section of the report on this research will present the data on successful and unsuccessful educationally retarded prisoners with reference to their performances on the Stanford Achievement Test (Initial and final testing) and the United States Health Service Classification Test (I.Q's). These data are presented in Tables 1 through 3.

Stanford Achievement Test (Initial Testing).--The data obtained from the initial testing period on the Stanford Achievement Test for the sixty successful and sixty unsuccessful prisoners who are inmates at the Atlanta Federal Prison, Atlanta Georgia, are presented in Table 1, page 22.

Successful group: The grade-placement from the initial testing period ranged from a low of 1.0, to a high of 4.8; with a mean of 3.65, a median of 3.92, a standard deviation of .92, and a standard error of the mean of .14. Further, Table 1 shows that 29 or 48.34 per cent of the subjects scored above the mean, 19 or 31.67 per cent of the subjects scored below the mean, and 12 or 20.00 per cent of them scored within the mean class-interval. This group had one illiterate subject.

Unsuccessful group: The grade-placement for the initial testing period ranged from a low of 1.0, to a high of 4.8; with a mean of 2.57, a median of 2.65, a standard deviation of 1.25 and a standard error of the mean of .19. Further, Table 1 shows that .28 or 46.66 per cent of

TABLE 1
GRADE PLACEMENT ON THE STANFORD ACHIEVEMENT TEST
(INITIAL TESTING)

Scores	Successful		Unsuccessful	
	Number	Per Cent	Number	Per Cent
4.8 - 5.1	1	1.67	0	0.00
4.4 - 4.7	9	15.00	5	8.33
4.0 - 4.3	19	31.67	5	8.33
3.6 - 3.9	12	20.00	6	10.00
3.2 - 3.5	7	11.67	7	11.67
2.8 - 3.1	5	8.33	5	8.33
2.4 - 2.7	2	3.33	8	13.33
2.0 - 2.3	1	1.67	5	8.33
1.6 - 1.9	0	0.00	1	1.67
1.2 - 1.5	0	0.00	0	0.00
.8 - 1.1	4	6.67	18	30.00
Total	60		60	
Mean	3.65		2.57	
Median	3.92		2.65	
Sigma	.92		1.25	
S. E.	.14		.19	
Index				

the subjects scored above the mean, .24 or 40.00 per cent scored below the mean, and 8 or 13.33 per cent scored within the mean class-interval. This group had eighteen illiterate subjects.

Stanford Achievement Test (Final Testing).--The data obtained for the final testing period of the Stanford Achievement Test for the sixty successful and sixty unsuccessful prisoners who are inmates at the Atlanta Federal :Prison, Atlanta, Georgia, are presented in Table 2, page 24.

Successful group: The grade-placements from the final testing period ranged from a low of 5.0, to a high of 9.8; with a mean of 5.91, a median of 5.49, a standard deviation of 1.05, and a standard error of the mean of .16. Further Table 2 shows that 19 or 31.67 per cent of the subjects scored above the mean, 29 or 48.33 per cent of the subjects scored below the mean, and 12 or 20.00 per cent of them scored within the mean class-interval. This group showed an improvement of 2.26 grade-placements.

Unsuccessful group: The grade-placements from the final testing period ranged from a low of 1.0, to a high of 4.9; with a mean of e 3.38 a median of 3.60, a standard deviation of .96, and a standard error of the mean of .12. Further, Table 2 shows that 34 or 56.67 per cent of the subjects scored above the mean, 19 or 31.67 per cent scored below the mean, and 7 or 11.67 per cent scored within the mean class-interval. This group showed an improvement of .81 grade-placements and all eighteen illiterates learned to read and write.

The results of this test were used to determine the successful and unsuccessful groups.

The United States Health Service Classification Test.--The data on the Intelligence Quotients from the United States Health Service Classification Test for the sixty successful and sixty unsuccessful prisoners who are inmates at the Atlanta Federal Prison, Atlanta, Georgia are presented in Table 3, page 26.

TABLE 2
GRADE-PLACEMENT ON THE STANFORD ACHIEVEMENT TEST
(FINAL TESTING)

Scores	Successful		Unsuccessful		
	Number	Per Cent	Scores	Number	Per Cent
9.5 - 9.9	1	1.67	4.5 - 4.9	5	8.33
9.0 - 9.4	1	1.67	4.0 - 4.4	16	26.67
8.5 - 8.9	1	1.67	3.5 - 3.9	13	21.67
8.0 - 8.4	1	1.67	3.0 - 3.4	7	11.67
7.5 - 7.9	2	3.33	2.5 - 2.9	8	13.33
7.0 - 7.4	2	3.33	2.0 - 2.4	6	10.00
6.5 - 6.9	3	5.00	1.5 - 1.9	1	1.67
6.0 - 6.4	8	13.33	1.0-1.4	4	6.67
5.5 - 5.9	12	20.00			
5.0 - 5.4	29	48.33			
Total	60	100.00	100.00	60	100.00
Mean		5.91			3.38
Median		5.49			3.60
Sigma		1.05			.96
S. E.		.16			.12
Index					

Successful group: The Intelligence Quotients ranged from a low of 68, to a high of 118; with a mean of 93.60, a median of 95.50, a standard deviation of 10.90, and a standard error of the mean of 1.63. Further, Table 3 shows that 33 or 55.01 per cent of the subjects scored above the mean, 22 or 36.68 per cent of the subjects scored below

the mean, and 5 or 8.33 per cent of the subjects scored within the mean class-interval.

Unsuccessful group: The Intelligence Quotients ranged from a low of 61 to a high of 106; with a mean of 86.15, a median of 82.84, a standard deviation of 12.00 and a standard error of the mean of 1.80. Further, Table 3 shows that 25 or 41.67 per cent of the subjects scored above the mean, 33 or 55.01 per cent scored below the mean, and 2 or 3.33 per cent scored within the mean class-interval.

Total group: The Intelligence Quotients ranged from a low of 61, to a high of 118; with a mean of 89.45, a median of 90.65, a standard deviation of 12.30, and a standard error of the mean of 1.13. Further, Table 3 shows that 63 or 52.49 per cent of the subjects scored above the mean, 45 or 37.50 per cent of the subjects scored below the mean, and 12 or 10.00 per cent of them scored within the mean class-interval.

The Indices of the Personnel Inventory Record

Introductory Statement.---This section of the report of this research will present the data descriptive of the information obtained from the Personnel Inventory Record for the sixty successful and sixty unsuccessful educationally retarded prisoners. These data are presented in Tables 4 through 20.

Age Entering School.---The data on the age entering school for the sixty successful and sixty unsuccessful prisoners who are inmates at the Atlanta Federal Prison, Atlanta, Georgia, are presented in Table 4, page 27.

Successful group: The ages entering school ranged from a low of 5 to a high of 12; with a mean of 6.38, a median of 6.09, a standard deviation

TABLE 3

INTELLIGENCE QUOTIENTS ON THE UNITED STATES
HEALTH SERVICE CLASSIFICATION TEST

Scores	Successful		Unsuccessful		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
115-119	1	1.67	0	0.00	1	.83
110-114	4	6.67	2	3.33	6	5.00
105-109	4	6.67	1	1.67	5	4.17
100-104	9	15.00	4	6.67	13	10.83
95-99	15	25.00	10	16.67	25	20.83
90-94	5	8.33	8	13.33	13	10.83
85-89	10	16.67	2	3.33	12	10.00
80-84	4	6.67	9	15.00	13	10.83
75-79	4	6.67	10	16.67	14	11.67
70-74	3	5.00	12	20.00	15	12.50
65-69	1	1.67	1	1.67	2	1.67
60-64	0	0.00	1	1.67	1	.83
Total	60		60		120	
Mean		93.60		86.15		89.45
Median		95.50		82.84		90.65
Sigma		10.90		12.00		12.30
S. E.		1.63		1.80		1.13
Index						

of 1.16, and a standard error of the mean of .17. Further, Table 4 shows that 8 or 13.35 per cent of the subjects scored above the mean, 1 or 1.67 per cent of the subjects scored below the mean, and 38 or

TABLE 4

AGE ENTERING SCHOOL FROM PERSONNEL INVENTORY RECORD

Scores	Successful		Unsuccessful		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
12	1	1.07	0	0.00	1	.83
11	0	0.00	0	0.00	00	0.00
10	1	1.67	0	0.00	1	.83
9	1	1.67	0	0.00	1	.83
8	1	1.67	4	6.67	5	4.17
7	4	6.67	7	11.67	11	9.17
6	38	63.33	29	48.33	67	55.83
5	1	1.67	1	1.67	2	1.67
No School	0	0.00	5	8.33	5	4.17
Unknown	13	21.67	14	23.33	27	22.50
Total	60	100.02	60	100.00	120	100.00
Mean		6.38		6.34		6.36
Median		6.09		6.16		6.13
Sigma		1.16		.69		.97
S. E.		.17		.11		.10
Index						

63.33 per cent of them were within the mean class-interval, 13 or 21.67 per cent registered unknown.

Unsuccessful group: The ages on leaving school ranged from a low of 8, to a high of 19, with a mean of 13.90, a median of 13.89, a standard deviation of 2.53, and a standard error of the mean of .40. Further, Table 5 shows that 15 or 25.00 per cent of the subjects scored above the mean, 19 or 28.33 per cent scored below the mean, Five or 8.33 per cent registered no schooling and 14 or 23.33 per cent registered unknown.

Total groups: The ages entering school ranged from a low of 5, to a high of 12 ; with a mean of 6.36, a median of 6.13, a standard deviation of .97, and a standard error of the mean of .10. Further Table 4 shows that .19 or 15.83 per cent of the subjects scored above the mean, 2 or

1.67 per cent of the subjects scored below the mean, and .67 or 55.83 per cent of them were within the mean class-interval. Five or 4.17 per cent registered no schooling and 27 or 22.50 per cent registered unknown.

Age Leaving School.--The data on the age leaving school for the sixty successful and sixty unsuccessful prisoners who are inmates at the Atlanta Federal Prison, Atlanta, Georgia are presented in Table 5, page 29.

Successful group: The ages on leaving school ranged from a low of 9, to a high of 17; with a mean of 13.96, a median of 14.30, a standard deviation of 2.26, and a standard error of the mean of .34. Further, Table 5 shows that 20 or 33.33 per cent of the subjects scored above the mean, 30 or 50.01 per cent of the subjects scored below the mean and 10 or 16.67 per cent of them were within the mean class interval. Sixteen or 26.67 per cent registered unknown.

Unsuccessful group: The ages on leaving school ranged from a low of 8, to a high of 19; with a mean of 13.90, a median of 13.89, a standard deviation of 2.53, and a standard error of the mean of .40. Further, Table 5 shows that 15 or 25.00 per cent of the subjects scored above the mean, 19 or 28.33 per cent scored below the mean, and 9 or 15.00 per cent were within the mean class-interval. Five or 8.33 per cent registered no schooling and 14 or 23.33 per cent registered unknown.

Total group: The ages leaving school ranged from a low of 8 to a high of 19; with a mean of 13.94, a median of 14.11, a standard deviation of 2.42, and a standard error of the mean of .26. Further, Table 5 shows that 35 or 29.17 per cent of the subjects scored above the mean, 31 or 25.83 per cent of the subjects scored below the mean, 19 or 15.83 per cent of them were within the mean class-interval. Five or 4.17 per cent

TABLE 5

AGE LEAVING SCHOOL FROM PERSONNEL INVENTORY RECORD

Scores	Successful		Unsuccessful		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
19	0	0.00	2	3.33	2	1.67
18	0	0.00	3	5.00	3	2.50
17	6	10.00	1	1.67	7	5.83
16	6	10.00	3	5.00	9	7.50
15	8	13.33	6	10.00	14	11.67
14	10	16.67	9	15.00	19	15.83
13	6	10.00	6	10.00	12	10.00
12	1	1.67	5	8.33	6	5.00
11	1	1.67	2	3.33	3	2.50
10	2	3.33	2	3.33	4	3.33
9	4	6.67	1	1.67	5	4.17
8	0	0.00	1	1.67	1	.83
No Schooling	0	0.00	5	8.33	5	4.17
Unknown	16	26.67	14	23.33	30	25.00
Total	60	100.01	60	99.99	120	100.00
Mean		13.98		13.90		13.94
Median		14.30		13.89		14.11
Sigma		2.26		2.53		2.42
S. E.		.34		.40		.26
Index						

registered no schooling and 30 or 25.00 per cent registered unknown.

Grade Completed.--The data on the grade completed by the sixty successful and sixty unsuccessful prisoners who are inmates at the Atlanta Federal Prison, Atlanta Georgia, are presented in Table 6, page 31.

Successful group: The grades completed ranged from a low of 1, to a high of 10; with a mean of 5.76, a median of 5.93, a standard deviation of 2.00, and a standard error of the mean of .26. Further, Table 6 shows that 21 or 35.00 per cent of the subjects scored above the mean, 38 or 63.34 per cent of the subjects scored below the mean, and 10 or 16.67 per cent of them were within the mean class-interval. Only 1 or 1.67 per cent registered unknown.

Unsuccessful group: The grades completed ranged from a low of 0, to a high of 8; with a mean of 4.18, a median of 4.30, a standard deviation of 2.13, and a standard error of the mean of .29. Further Table 6 shows that 27 or 45.00 per cent of the subjects scored above the mean, 24 or 40.00 per cent scored below the mean, and 5 or 8.33 per cent were within the mean class-interval. Four or 6.67 per cent registered unknown.

Total group: The grades completed ranged from a low of 0, to a high of 10; with a mean of 4.99, a median of 5.27, a standard deviation of 1.95, and a standard error of the mean of .18. Further, Table 6 shows that 54 or 45.01 per cent of the subjects scored above the mean, 46 or 38.34 per cent of the subjects scored below the mean, and 15 or 12.50 per cent of them were within the mean class interval. Five or 4.7 per cent registered unknown.

Job Changes in Prison.--The data on job changes in prison for the sixty successful and sixty unsuccessful prisoners who are inmates at the

TABLE 6
GRADE COMPLETED FROM THE PERSONNEL INVENTORY RECORD

Scores	Successful		Unsuccessful		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
10	2	3.33	0	0.00	2	1.67
9	3	5.00	0	0.00	3	2.50
8	6	10.00	3	5.00	9	7.50
7	10	16.67	4	6.67	14	11.67
6	15	25.00	11	18.33	26	21.61
5	6	10.00	9	15.00	15	12.50
4	7	11.67	5	8.33	12	10.00
3	8	13.33	14	23.33	22	18.33
2	1	1.67	4	6.67	5	4.17
1	1	1.67	1	1.67	2	1.67
No School	0	0.00	5	8.33	5	4.17
Unknown	1	1.67	4	6.67	5	4.17
Total	60	100.01	60	100.00	120	100.02
Mean		5.76		4.18		4.99
Median		5.93		4.30		5.21
Sigma		2.00		2.13		1.95
S. E.		.26		.29		.18
Index						

Atlanta Federal Prison, Atlanta, Georgia, are presented in Table 7, page 32.

Successful group: The job changes in prison ranged from a low of 0

TABLE 7

JOB CHANGES IN PRISON FROM THE PERSONNEL INVENTORY RECORD

Scores	Successful		Unsuccessful		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
7	1	1.67	0	0.00	1	.83
6	0	0.00	1	1.67	1	.83
5	4	6.67	3	5.00	7	5.83
4	4	6.67	5	8.33	9	7.50
3	12	20.00	12	20.00	24	20.00
2	9	15.00	15	25.00	24	20.00
1	7	11.67	15	25.00	22	18.33
0	13	21.67	9	15.00	22	18.33
Unknown	10	16.67	0	0.00	10	8.33
Total	60	100.02	60	100.00	120	99.98
Mean		2.08		2.03		2.05
Median		2.05		1.90		1.96
Sigma		1.72		1.45		1.57
S. E.		.25		.19		.14
Index						

to a high of 7; with a mean of 2.08, a median of 2.05, a standard deviation of 1.72, and a standard error of the mean of .25. Further, Table 7 shows that 21 or 35.01 per cent of the subjects scored above the mean, 20 or 33.34 per cent of the subjects scored below the mean, and 9 or 15.00 per cent of them scored within the mean class-interval. Ten or 16.67 per cent registered unknown.

Unsuccessful group: The job changes in prison ranged from a low of 0 to a high of 6; with a mean of 2.03, a median of 1.90, a standard deviation of 1.45, and a standard error of the mean of .19. Further, Table 7 shows that 21 or 35.00 per cent of the subjects scored above the mean, 24 or 40.00 per cent scored below the mean, and 15 or 25.00 per cent scored within the mean class-interval.

Total group: The job changes in prison ranged from a low of 0, to a high of 7; with a mean of 2.05, a median of 1.96, a standard deviation of 1.57, and a standard error of the mean of .14. Further, Table 7 shows that .42 or 34.99 per cent of the subjects scored above the mean, 44 or 36.66 per cent of the subjects scored below the mean, and 24 or 20.00 per cent of them were within the mean class-interval. Ten or 8.33 per cent registered unknown.

Violations of Institutional Regulations.---The data on the number of violations of institutional regulations for the sixty successful and sixty unsuccessful prisoners who are inmates at the Atlanta Federal Prison, Atlanta, Georgia, are presented in Table 8, page 34.

Successful group: The number of violations ranged from a low of 0, to a high of 16; with a mean of 1.83, a median of .75, a standard deviation of 2.93, and a standard error of the mean of .39. Further, Table 8 shows that 15 or 25.01 per cent of the subjects scored above the mean, 39 or 65.00 per cent of the subjects scored below the mean, and 3 or 5.00 per cent of them were within the mean class-interval. Three or 5.00 per cent registered unknown.

Unsuccessful Group: The number of violations ranged from a low of 0, to a high of 12; with a mean of 1.32, a median of .47, a standard deviation of 2.27 and a standard error of the mean of .27. Further, Table 8 shows that 14 or 23.35 per cent of the subjects scored above the mean, 31 or 51.67 per cent scored below the mean, and 15 or 25.00 per cent were within the mean class-interval.

Total group: The number of violations ranged from a low of 0 to a high of 16; with a mean of 1.56, a median of .59, a standard deviation of 2.63

TABLE 8

VIOLATIONS OF INSTITUTIONAL REGULATIONS FROM THE
PERSONNEL INVENTORY RECORD

Scores	Successful		Unsuccessful		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
16	1	1.67	0	0.00	1	.83
12	0	0.00	1	1.67	1	.83
10	1	1.67	0	0.00	1	.83
9	1	1.67	0	0.00	1	.83
8	0	0.00	1	1.67	1	.83
7	1	1.67	1	1.67	2	1.67
6	0	0.00	1	1.67	1	.83
5	3	5.00	1	1.67	4	3.33
4	3	5.00	2	3.33	5	4.17
3	5	8.33	4	6.67	9	7.50
2	3	5.00	3	5.00	6	5.00
1	14	23.33	15	25.00	29	24.17
0	25	41.67	31	51.67	56	46.67
Unknown	3	5.00	0	0.00	3	2.50
Total	60	100.00	60	100.02	120	99.99
Mean		1.83		1.32		1.56
Median		0.75		0.47		0.59
Sigma		2.93		2.27		2.63
S. E.		.39		.27		.24
Index						

and a standard error of the mean of .24. Further, Table 8 shows that 26 or 21.65 per cent of the subjects scored above the mean, 85 or 70.84 per cent of the subjects scored below the mean, and 6 or 5.00 per cent of them scored within the mean class-interval. Three or 2.5 per cent registered unknown.

Times in Punishment Quarters.---The data on the number of times in punishment quarters for the sixty successful and sixty unsuccessful prisoners who are inmates at the Atlanta Federal Prison, Atlanta, Georgia are presented in Table 9, page 36.

Successful group: The number of times in punishment quarters ranged from a low of 0, to a high of 7; with a mean of .82, a median of .38, a standard deviation of 1.37, and a standard error of the mean of .19. Further, Table 9 shows that 9 or 15.01 per cent of the subjects scored above the mean, 29 or 48.33 per cent of the subjects scored below the mean, and 13 or 21.67 per cent of them were within the mean class-interval. Nine or 15.00 per cent registered "unknown."

Unsuccessful group: The number of times in punishment quarters ranged from a low of 0, to a high of 8; with a mean of 1.05, a median of .39, a standard deviation of 1.67 and a standard error of the mean of .22. Further, Table 9 shows that 16 or 26.67 per cent of the subjects scored above the mean, 33 or 55.00 per cent scored below the mean, and 10 or 16.67 per cent were within the mean class-interval. One or 1.67 per cent registered unknown.

Total group: The number of times in punishment quarters ranged from a low of 0, to a high of 8 ; with a mean of .95, a median of .39, a standard deviation of 1.63, and a standard error of the mean of .16.

, TABLE 9

TIMES IN PUNISHMENT QUARTERS FROM THE
PERSONNEL INVENTORY RECORD

Scores	Successful		Unsuccessful		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
8	0	0.00	1	1.67	1	.83
7	1	1.67	0	0.00	1	.83
6	0	0.00	1	1.67	1	.83
5	1	1.67	2	3.33	3	2.50
4	0	0.00	1	1.67	1	.83
3	3	5.00	2	3.33	5	4.17
2	14	6.67	9	15.00	13	10.83
1	13	21.67	10	16.67	23	19.17
0	29	48.33	33	55.00	62	51.67
Unknown	9	15.00	1	1.67	10	8.33
Total	60	100.01	60	100.01	120	99.99
Mean		.82		1.05		.95
Median		.38		.39		.39
Sigma		1.37		1.67		1.63
S. E.		.19		.22		.16
Index						

Further, Table 9 shows that 25 or 20.82 per cent of the subjects scored above the mean, 62 or 51.67 per cent of the subjects scored below the mean, and 23 or 19.12 per cent of them were within the mean class-interval. Ten or 8.33 per cent registered unknown.

Medical Treatment.--The data on the number of medical treatments for the sixty successful and sixty unsuccessful prisoners who are inmates at the Atlanta Federal Prison, Atlanta, Georgia, are presented in Table 10, page 38.

Successful group: The number of medical treatments ranged from a low of 0, to a high of 8; with a mean of 2.35, a median of 2.50, a standard deviation of 2.06, and a standard error of the mean of .27. Further Table 10 shows that 15 or 25.00 per cent of the subjects scored above the mean, 26 or 43.33 per cent of the subjects scored below the mean, and 4 or 6.67 per cent of them were within the mean class-interval. Fifteen or 25.00 per cent registered unknown.

Unsuccessful group; The number of medical treatments ranged from a low of 0 to a high of 15; with a mean of 1.56, a median of .54, a standard deviation of 2.78, and a standard error of the mean of .36. Further Table 10 shows that 11 or 18.35 per cent of the subjects scored above the mean, 42 or 70.00 per cent scored below the mean, and 6 or 10.00 per cent were within the mean class-interval. One or 1.67 per cent registered unknown.

Total group: The number of medical treatments ranged from a low of 0 to a high of 15; with a mean of 1.83, a median of 1.15, a standard deviation of 2.41, and a standard error of the mean of .20. Further, Table 10 shows that 26 or 21.67 per cent of the subjects scored above the mean, 68 or 56.67 per cent of the subjects scored below the mean, and 10 or 8.33 per cent registered unknown. Sixteen or 13.33 per cent registered unknown.

TABLE 10

NUMBER OF MEDICAL TREATMENTS FROM THE
PERSONNEL INVENTORY RECORD

Scores	Successful		Unsuccessful		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
15	0	0.00	1	1.67	1	.83
11	0	0.00	1	1.67	1	.83
8	1	1.67	1	1.67	2	1.67
7	2	3.33	1	1.67	3	2.50
6	1	1.67	1	1.67	2	1.67
5	8	13.33	0	0.00	8	6.67
4	0	0.00	2	3.33	2	1.67
3	3	5.00	4	6.67	7	5.83
2	4	6.67	6	10.00	10	8.33
1	11	18.33	13	21.67	24	20.00
0	15	25.00	29	48.33	44	36.67
Unknown	15	25.00	1	1.67	16	13.33
Total	60	100.00	60	100.02	120	100.00
Mean		2.35		1.56		1.83
Median		2.50		.54		1.15
Sigma		2.06		2.78		2.41
S. E.		.27		.36		.20
Index						

Psychological Treatment.--The data on the number of psychological treatments for the sixty successful and sixty unsuccessful prisoners who are inmates at the Atlanta Federal Prison, Atlanta, Georgia are presented in Table 11, page 40.

Successful group: The number of psychological treatments ranged from a low of 0 to a high of 1. Forty or 66.67 per cent had received treatments, 2 or 3.33 per cent had received one treatment and 18 or 30.00 per cent registered "unknown."

Unsuccessful group: In this group 52 or 86.67 per cent had received no psychological treatments, and 8 or 13.33 per cent registered "unknown."

Total group: The number of psychological treatments ranged from a low of 0 to a high of 1. Ninety-two or 76.67 per cent had received no treatment, 2 or 1.67 per cent had received one treatment, and 26 or 21.67 per cent registered "unknown."

Environment; Slum Area.--The data on whether or not the childhood environment was a slum area for the sixty successful and sixty unsuccessful prisoners who are inmates at the Atlanta Federal Prison, Atlanta, Georgia, are presented in Table 12, page 41.

Successful group: In this group 9 or 15.00 per cent registered "yes", 43 or 71.67 per cent registered "no", and 8 or 13.33 per cent registered "unknown."

Unsuccessful group: In this group 8 or 13.33 per cent registered "yes," 42 or 70.00 per cent registered "no" and 10 or 16.67 per cent registered "unknown."

Total Group: In the total group 17 or 14.17 per cent registered "yes," 85 or 70.83 per cent registered "no," and 18 or 15.00 per cent registered

TABLE 11
NUMBER OF PSYCHOLOGICAL TREATMENTS FROM
PERSONNEL INVENTORY RECORD

Variables	Successful		Unsuccessful		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
0	40	66.67	52	86.67	92	76.67
1	2	3.33			2	1.67
Unknown	18	30.00	8	13.33	26	21.67
Total	60	100.00	60	100.00	120	100.01

"unknown."

These data indicated that the majority of these prisoners with a poor educational background came from environments that were not slum areas. Further, there arises the inference in these cases particularly, that residential areas are not necessarily a source of breeding tendency toward crime.

Size of Town.--The data on the size of the town in which prisoners grew up for the sixty successful and sixty unsuccessful prisoners who are inmates at the Atlanta Federal Prison, Atlanta, Georgia are presented in Table 13, page 42.

Successful Group: The size of the town in which prisoners grew up ranged from a low of 6 or 10.00 per cent for small city, to a high of 26 or 43.33 per cent for urban area. Next in order of size of town were rural area with 17 or 28.33 per cent and small town with 11 or 18.33 per cent.

Unsuccessful Group: The size of the town in which prisoners grew up ranged from a low of 2 to 3.33 per cent for small city, to a high of

TABLE 12

ENVIRONMENT, SLUM AREA YES - NO RESPONSES FROM
PERSONNEL INVENTORY RECORD

Variables	Successful		Unsuccessful		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Yes	9	15.00	8	13.33	17	14.17
No	43	71.67	42	70.00	85	70.83
Unknown	8	13.33	10	16.67	18	15.00
Total	60	100.00	60	100.00	120	100.00

29 or 48.33 per cent for rural. Next in order of size of town were urban area with 14 or 23.33 per cent, small town with 10 or 16.67 per cent, and "unknown" was registered by 5 or 8.33 per cent.

The majority of the successful group grew up in urban areas. The majority of the unsuccessful group grew up in rural areas. The smallest number for both groups came from a small city.

Broken Homes.---The data on whether or not the prisoners came from broken homes for the sixty-successful and the sixty unsuccessful prisoners who are inmates at the Atlanta Federal Prison, Atlanta, Georgia, are presented in Table 14, page 43.

Successful Group: In this group 33 or 55.00 per cent registered "yes," 15 or 25.00 per cent registered "no," and 12 or 20.00 per cent registered "unknown."

Unsuccessful group: In this group 28 or 46.67 per cent registered "yes", 22 or 36.67 per cent registered "no," and 10 or 16.67 per cent registered "unknown."

Total Group: In the total group 61 or 50.83 per cent registered "yes,"

TABLE 13

SIZE OF TOWN PRISONERS GREW UP IN DATA FROM
PERSONNEL INVENTORY RECORD

Variables	Successful		Unsuccessful		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Small Town	11	18.33	10	16.67	21	17.50
Small City	6	10.00	2	3.33	8	6.67
Urban	26	43.33	14	23.33	40	33.33
Rural	17	28.33	29	48.33	46	38.33
Unknown	0	0.00	5	8.33	5	4.17
Total	60	99.99	60	99.99	120	100.00

37 or 30.83 per cent registered "no," and 22 or 18.33 per cent registered "unknown."

These data showed that the majority of both groups came from broken homes. Again, these data might well pose the question: whether or not the environment of a broken home fosters and perchance, facilitates tendencies toward undesirable behavior patterns designated as crime.

Marital Status.--The data on the marital status of the sixty unsuccessful and sixty successful prisoners who are inmates at the Atlanta Federal Prison, Atlanta, Georgia are presented in Table 15, page 44.

Successful Group: The marital status ranged from a low of 1 or 1.67 per cent for widower, to a high of 27 or 45.00 per cent for married. The other variables showed that 5 or 8.33 per cent were separated, that 10 or 16.67 per cent were divorced, and that 15 or 25.00 per cent were single. Two or 3.33 per cent registered unknown.

Unsuccessful Group: The marital status ranged from a low of 2 or

TABLE 14

BROKEN HOMES DATA FROM PERSONNEL INVENTORY RECORD

Variables	Successful		Unsuccessful		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Yes	33	55.00	28	46.67	61	50.83
No	15	25.00	22	36.67	37	30.83
Unknown	12	20.00	10	16.67	22	18.33
Total	60	100.00	60	100.01	120	99.99

3.33 per cent divorced, to a high of 28 or 46.67 per cent for married. The other variables showed that 4 or 6.67 per cent were separated, and that 17 or 28.33 per cent were single. Nine or 15.00 per cent registered "unknown."

Total Group: The marital status ranged from a low of 1 or .83 per cent for widower, to a high of 55 or 45.83 per cent for married. The other variables showed that 9 or 7.50 per cent were separated, 12 or 10.00 per cent were divorced, and 32 or 26.67 per cent were single. Eleven or 9.17 per cent registered "unknown."

The data on marital status for both groups indicated that the variable of being married was the largest registered. Since the bulk of the prisoners were married, the question is posed: whether or not the stress and strain to achieve economic security for the married man and his family is conducive to the provocation of crime behavior.

Occupation Prior to Prison.---The data on the occupation prior to prison for the sixty successful and sixty unsuccessful prisoners who are inmates at the Atlanta Federal Prison, Atlanta, Georgia, are

TABLE 15

MARITAL STATUS DATA FROM PERSONNEL INVENTORY RECORD

Variables	Successful		Unsuccessful		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Single	15	25.00	17	28.33	32	26.67
Married	27	45.00	28	46.67	55	45.83
Divorced	10	16.67	2	3.33	12	10.00
Separated	5	8.33	4	6.67	9	7.50
Widower	1	1.67	0	0.00	1	0.83
Unknown	2	3.33	9	15.00	11	9.17
Total	60	100.00	60	100.00	120	100.00

presented in Table 16, page 45.

Successful Group: The occupation prior to prison ranged from a low of 1 or 1.67 per cent for eight occupations including such as coal miner, building contractor, painter, factory worker, mechanic, tailor, commercial fisher, merchant seaman; to a high of 21 or 35.00 per cent for laborer. The other occupations showed that 4 or 6.67 per cent were truck drivers or service occupations, 8 or 13.33 per cent were farmers, and 13 or 21.67 per cent were skilled laborers. One or 1.67 per cent never worked.

Unsuccessful Group: The occupation prior to prison ranged from a low of 1 or 1.67 for the occupations of painter, service occupation, and merchant seaman; to a high of 22 or 36.67 per cent for laborer. The other occupations showed that 5 or 8.33 per cent were truck drivers, 13 or 21.67 per cent were farmers, 8 or 13.33 per cent were skilled

TABLE 16

OCCUPATION PRIOR TO PRISON DATA FROM
PERSONNEL INVENTORY

Variables	Successful		Unsuccessful		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Truck Driver	4	6.67	5	8.33	9	7.50
Painter	1	1.67	1	1.67	2	1.67
Coal Miner	1	1.67	0	0.00	1	0.83
Factory Worker	1	1.67	0	0.00	1	0.83
Laborer	21	35.00	22	36.67	43	33.83
Service Occupation	4	6.67	1	1.67	5	4.17
Farmer	8	13.33	13	21.07	21	17.50
Mechanic	1	1.67	0	0.00	1	0.83
Skilled Laborer	13	21.67	8	13.33	21	17.50
Tailor	1	1.67	2	3.33	3	2.50
Commercial Fishing	1	1.67	0	0.00	1	0.83
Merchant Seaman	1	1.67	1	1.67	2	1.67
Building Contractor	1	1.67	0	0.00	1	0.83
Barber	0	0.00	3	5.00	3	2.50
Never Worked	1	1.67	4	6.67	5	4.17
Unknown	1	1.67	0	0.00	1	0.83
Total	60	100.04	60	100.01	120	99.99

laborers, and 3 or 5.00 per cent were barbers. Four or 6.67 per cent never worked.

Total Group: The occupations prior to prison ranged from a low of 1.67 per cent for the occupations of coal miner, factoryworker, mechanic, commercial fisherman, and building contractor; to a high of 43 or 33.83 per cent for laborer. The other major occupations were 21 or 17.50 per cent for each, farmer and skilled laborer, 9 or 7.50 per cent truck driver, and 5 or 4.17 per cent for service occupations. Five or 4.17 per cent never worked and 1 or .83 per cent registered "unknown."

Most of the prisoners were unskilled laborers before coming to prison. The next two high ranking occupations were farmer and skilled laborer.

Juvenile Record.--The data on the juvenile record of crime for the sixty successful and sixty unsuccessful prisoners who are inmates at the Atlanta Federal Prison, Atlanta, Georgia, are presented in Table 17, page 47.

Successful Group: In this group 19 or 31.67 per cent registered "yes," 39 or 65.00 per cent registered "no" and 2 or 3.33 per cent registered "unknown."

Unsucessful Group: In this group 18 or 30.00 per cent registered "yes," and 42 or 70.00 per cent registered "no."

Total Group: For the total group 37 or 30.83 per cent registered "yes," 81 or 67.50 per cent registered "no," and 2 or 1.67 per cent registered "unknown."

These data indicate that a majority of these inmates did not have juvenile records.

TABLE 17
JUVENILE RECORD DATA FROM THE
PERSONNEL INVENTORY RECORD

Variables	Successful		Unsuccessful		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Yes	19	31.67	18	30.00	37	30.83
No	39	65.00	42	70.00	81	67.50
Unknown	2	3.33	0	0.00	2	1.67
Total	60	100.00	60	100.00	60	100.00

Juvenile Record.---The data on the sixty successful and sixty unsuccessful prisoners who are inmates at the Atlanta Federal Prison, Atlanta, Georgia, are presented in Table 17 above.

Successful Group: In this group 19 or 31.67 per cent registered "yes", 39 or 65.00 per cent registered "no" and 2 or 3.33 per cent registered "unknown."

Unsuccessful Group: In this group 18 or 30.00 per cent registered "yes," and 42 or 70.00 per cent registered "no."

Total group: For the total 37 or 30.83 per cent registered "yes", 81 or 67.50 per cent registered "no," and 2 or 1.67 per cent registered "unknown."

These data indicate that a majority of these inmates did not have juvenile records.

Adult Record.---The data on the adult record of crime for the sixty successful and sixty unsuccessful prisoners who are inmates at the Atlanta Federal Prison, Atlanta, Georgia, are presented in Table 18,

TABLE 18

ADULT RECORD DATA FROM PERSONNEL INVENTORY RECORD

Variables	Successful		Unsuccessful		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Yes	60	100.00	54	90.00	114	95.00
No	0	0.00	6	10.00	6	5.00
Total	60	100.00	60	100.00	120	100.00

above.

Successful Group: The record of this group indicated that all 60 or 100.00 per cent registered "yes" to having an adult record of crime.

Unsuccessful Group: In this group 54 or 90.00 per cent registered "yes," and 6 or 10.00 per cent registered "no" to having an adult record of crime.

Total Group: In the total group, 114 or 95.00 per cent registered "yes" and 6 or 5.00 per cent registered "no" to having an adult record of crime.

These data indicated that both groups had an adult record of crime.

Types of Crime.---The data on the types of crime for which the sixty successful and sixty unsuccessful prisoners were committed to the Atlanta Federal Prison, Atlanta, Georgia, are presented in Table 19, page 49.

Successful Group: The types of crime for which the subjects were committed ranged from a low of 1 or 1.67 for the crimes of kidnapping, fire arms, counterfeit, hit and run, violation of Mann Act, transfer of stolen securities, and military violations; to a high of 12 or 20.00

TABLE 19

TYPES OF CRIME COMMITTED FROM PERSONNEL INVENTORY RECORD

Variables	Successful		Unsuccessful		Total	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
Narcotics	8	13.33	12	20.00	20	16.67
Forgery	8	13.33	2	3.33	10	8.33
Bank Robbery	5	8.33	1	1.67	6	5.00
Liquor	3	5.00	16	26.67	19	15.83
Internal Revenue	2	3.33	0	0.00	2	1.67
Interstate Transportation						
Stolen Car	12	20.00	3	5.00	15	12.50
Auto Theft	3	5.00	5	8.33	8	6.67
Burglary	4	6.67	2	3.33	6	5.00
Kidnapping	1	1.67	0	0.00	1	0.83
Fire Arms	1	1.67	0	0.00	1	0.83
Parole Violation	3	5.00	1	1.67	4	3.33
Fraud	5	8.33	2	3.33	7	5.83
Counterfeit	1	1.67	0	0.00	1	0.83
Hit and run	1	1.67	0	0.00	1	0.83
Mann Act	1	1.67	2	3.33	3	2.50
Rape	0	0.00	1	1.67	1	0.83
Conspiracy	0	0.00	1	1.67	1	0.83
Transfer Stolen Securities	1	1.67	0	0.00	1	0.83
Military Violation	1	1.67	0	0.00	1	0.83
Total	60	100.01	60	100.00	120	99.97

per cent for interstate transportation of stolen cars. Others showed narcotics and forgery; 5 or 8.33 per cent for bank robbery and fraud; 4 or 6.67 per cent for burglarly, and 3 or 5.00 per cent for liquor.

Unsuccessful Group: The types of crime for which the subjects were committed ranged from a low of 1 or 1.67 per cent for the crimes of bank robbery, parole violations, rape, and conspiracy; to a high of 16 or 26.67 per cent for liquor. Other crimes showed 12 or 20.00 per cent for narcotics, 5 or 8.33 per cent for auto theft, 3 or 5.00 per cent for interstate transportation of stolen cars, and 2 or 3.33 per cent for burglary, forgery, fraud, violation of the Mann Act.

Total Group: the types of crime for which subjects were committed ranged from a low of 1 or .83 for the crime of kidnapping, fire arms, counterfeit, hit and run, conspiracy, transfer of stolen securities, and military violations; to a high of 20 or 16.67 per cent for narcotics. Other high ranking crimes were 19 or 15.83 per cent for liquor, 15 or 12.50 per cent for interstate transportation of stolen cars, 10 or 8.33 per cent for forgery and 8 or 6.67 per cent for auto theft.

These data show that the major crimes for which both groups were committed were narcotics, liquor, interstate transportation of stolen cars, forgery, and auto theft.

The Correspondence of Types of Crimes with Intelligence.--The data on the types of crime with relation to intelligence for the sixty successful and sixty unsuccessful educationally retarded prisoners who are inmates at the United States Penitentiary, Atlanta, Georgia, are presented in Table 20, page 51.

Successful Group: The intelligence ranges for the various types of

TABLE 20

TYPES OF CRIME WITH DATA ON INTELLIGENCE FOR THE SUBJECTS OF THIS RESEARCH

Types of Crimes	No.	I. Q. Range	Successful			No.	I. Q. Range	Unsuccessful		
			I. Q. Median	G. P. Range	G. P. Median			I. Q. Median	G. P. Range	G. P. Median
Interstate Transportation of Stolen Cars	12	68-108	97	5.0-8.2	5.5	-	-	-	-	-
Narcotics	8	76-98	88	5.2-8.9	5.9	13	74-101	82	2.2-4.7	3.9
Forgery	9	83-118	96	5.0-6.4	5.3	6	73-111	80.5	3.3-4.6	3.9
Bank Robbery	4	92-99	98	5.2-5.7	5.5	1	91	91	2.6	2.6
Liquor	4	91-114	98	5.2-6.3	5.4	22	66-103	87	1-4.9	2.89
Internal Revenue	2	89-101	95	5.1-5.5	5.3	0	-	-	-	-
Fraud	2	86-107	97	5.4-6.2	5.8	0	-	-	-	-
Fire Arms	1	110	110	6.2	6.2	0	-	-	-	-
Kidnapping	1	83	83	5.0	5.0	0	-	-	-	-
Robbery	5	70-114	95	5.5-9.8	6.7	2	94-96	95	3.9-4.2	4.05
Auto Theft	2	96-104	100	6.1-7.9	7.0	9	73-106	77	2.1-4.5	3.4
Military Violations	1	83	83	5.2	5.2	0	-	-	-	-
Probation Violation	3	73-104	101	5.0-9.4	8.1	1	76	76	4.0	4.0
Violation of Mann Act	1	89	89	7.7	7.7	2	99	99	3.7-4.9	4.3
Counterfeit	1	98	98	5.0-	5.0	0	-	-	-	-
Mail Theft	2	74-85	79.5	5.0-5.1	5.05	0	-	-	-	-
Stolen Securities	1	114	114	5.5	5.5	0	-	-	-	-
Hit and Run	1	99	99	5.1	5.1	0	-	-	-	-
Burglary	0	-	-	-	-	2	61-73	67	1-3.0	1.6
Conspiracy	0	-	-	-	-	1	111	111	3.3	3.3
Rape	0	-	-	-	-	1	76	76	1	1

crimes were as follows: Interstate Transportation of stolen cars was highest with twelve cases, intelligence quotient range of 68 to 108, with a median intelligence quotient of 97. Next was forgery with nine cases, an intelligence quotient range of 83 to 118, and a median of 96; narcotics had eight cases, with an intelligence quotient range of 76 to 98 and a median of 88. Robbery had five cases with an intelligence quotient range of 70 to 114 and a median of 95. The other crimes had four cases or less.

Unsuccessful Group: The intelligence ranges for the various types of crime were as follows. Liquor was highest with 22 cases, an intelligence quotient range of 66 to 103 with a median of 87. Next, was narcotics with 13 cases, an intelligence quotient range of 74 to 101 and a median of 82. Auto theft had 9 cases with an intelligence range of 73 to 106, with a median of 77. Forgery had six cases with an intelligence quotient range of 73-111 and a median intelligence quotient of 80.5. The other crimes have two cases or less.

The successful group appear to show the higher intelligence quotient for the crimes that both groups committed. In the successful group the crime with frequencies of more than four with the highest median intelligence quotient was interstate transportation of stolen cars; whereas for the unsuccessful group it was illegal liquor.

Successful Group: The grade-placement ranges for the various crimes were as follows. For the crimes discussed above, the grade-placements showed a range of 5.0 to 8.2 and a median of 5.5 for interstate transportation of stolen cars. For forgery, the grade-placement range was from 5.0 to 6.4 with a median of 5.3; narcotics showed a grade-placement

range of from 5.2 to 8.9 with a median of 5.9; and robbery showed a grade-placement range from 5.5 to 9.3 with a median grade-placement of 6.7.

Unsuccessful Group: The grade-placement range for the various crimes as is discussed for intelligence are given as follows. Liquor showed a grade-placement range of from illiterate to 4.9 with a median of 2.39; narcotics showed a grade-placement range of from 2.2 to 4.7 with a median grade-placement of 3.9; for auto theft it was a grade-placement range of from 2.1 to 4.5 with a median grade-placement of 3.4; and for forgery it was a grade placement range of from 3.3 to 4.6 with a median grade-placement of 3.9.

The highest median grade-placement for the successful group was for the crime of narcotics whereas for the unsuccessful group it was for the crimes of narcotics and forgery.

The Indices of the Significance of the Difference for the two Groups

Introductory Statement.--Among the purposes of this research was to determine the significance of the differences between the successful and unsuccessful groups of educationally retarded prisoners wherever the pertinent data were available. This section of the report on research will, therefore, present the data descriptive of the significance of the differences between these two groups of educationally retarded prisoners. These data are presented in Tables 21 through 30.

The "t" Ratio on the Stanford Achievement Test (Initial Testing).--The "t" ratio for the significant difference for the data on the Stanford Achievement Test (Initial Testing) for the sixty successful and sixty unsuccessful prisoners who are inmates at the United States

TABLE 21

SIGNIFICANT DIFFERENCES BETWEEN GRADE-PLACEMENT ON THE
STANFORD ACHIEVEMENT TEST (INITIAL TESTING)

Groups	Mean	Median	Sigma	S. E.	S. E.	Diff.	"t"
					of Mean	of Mean	
Successful	3.65	3.92	.92	.14	.24	1.08	4.50
Unsuccessful	2.57	2.65	1.25	.19			

Penitentiary, Atlanta, Georgia, are presented in Table 21, above.

The mean for the successful group was 3.65, for the unsuccessful group was 2.57, with a difference of 1.08 in favor of the successful group. The median for the successful group was 3.92, for the unsuccessful group it was 2.65, with a difference of 1.27 in favor of the successful group. The standard deviation for the successful group was .92, for the unsuccessful group it was 1.25 with a difference of .33 in favor of the unsuccessful group. The standard error of the mean for the successful group was .14, for the unsuccessful group it was .19 with a difference of .05 in favor of the unsuccessful group. The standard error of the difference between the two means was .24.

The "t" was found to be 4.50. This "t" of 4.50 was significant for it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the two sets of grade-placements on the Achievement test was statistically significant.

The "t" Ratio on the Stanford Achievement Test (Final Testing).--
The "t" ratio for the significant difference for the data on the Stanford Achievement Test (Final Testing) for the sixty successful and

TABLE 22

SIGNIFICANT DIFFERENCES BETWEEN GRADE-PLACEMENT ON THE
STANFORD ACHIEVEMENT TEST (FINAL TESTING)

Groups	Mean	Median	Sigma	S. E.	S. E. of	Diff. of	"t"
					Mean	Mean	
Successful	5.91	5.49	1.05	.16			
					.20	2.53	12.65
Unsuccessful	3.38	3.60	.96	.12			

sixty unsuccessful prisoners who are inmates at the United States Penitentiary, Atlanta, Georgia, are presented in Table 22 above

The mean for the successful group was 5.91, for the unsuccessful group it was 3.38 with a difference of 2.53 in favor of the successful group. The median for the successful group was 5.49, for the unsuccessful group it was 3.60, with a difference of 2.89 in favor of the successful group. The standard deviation for the successful group was 1.05, for the unsuccessful group it was .96 with a difference of .09 in favor of the successful group. The standard error of the mean for the successful group was .16, for the unsuccessful group it was .12 with a difference of .04 in favor of the successful group. The standard error of the difference between the two means was .20.

The "t" was found to be 12.65. This "t" of 12.65 was significant for it was more than 2.58 at the one per cent level of confidence. Therefore, the difference between the two sets of grade-placements on the achievement test was statistically significant.

TABLE 23

SIGNIFICANT DIFFERENCE BETWEEN INTELLIGENCE QUOTIENTS FROM THE UNITED STATES HEALTH SERVICE CLASSIFICATION TEST

Groups	Mean	Median	Sigma	S. E.	S. E.	Diff	"t"
					of Mean	of Mean	
Successful	93.60	95.50	10.90	1.63			
					2.43	7.45	3.07
Unsuccessful	86.15	82.84	12.00	1.80			

The "t" Ratio on the Intelligence Quotients on the United States Health Service Classification Test.--The "t" ratio for the significant difference for the data on the Intelligence Quotients on the United States Health Service Classification Test for the sixty successful and sixty unsuccessful prisoners who are inmates at the United States Penitentiary, Atlanta, Georgia, are presented in Table 23 above.

The mean for the successful group was 93.60, for the unsuccessful group it was 86.15 with a difference of 7.45 in favor of the successful group. The median for the successful group was 95.50, for the unsuccessful group it was 82.34, with a difference of 12.66 in favor of the successful group. The standard deviation for the successful group was 10.90, for the unsuccessful group it was 12.00 with a difference of 1.10 in favor of the unsuccessful group. The standard error of the mean for the successful group was 1.63, for the unsuccessful group it was 1.80 with a difference of .17 in favor of the unsuccessful group. The standard error of the difference between the two means was 2.43.

The "t" was found to be 3.07. This "t" of 3.07 was significant for it was more than 2.58 at the one per cent level of confidence. Therefore, the difference between the two sets of Intelligence Quotients on the

TABLE 24

SIGNIFICANT DIFFERENCE BETWEEN AGE ENTERING SCHOOL DATA FROM THE
PERSONNEL INVENTORY RECORD

Groups	Mean	Median	Signa	S. E.	S. E. of Mean	Diff. of Mean	"t"
Successful	6.38	6.09	1.16	.17			
					.20	.04	.20
Unsuccessful	6.34	6.16	.69	.11			

United States Health Service Classification Test was statistically significant.

The "t" Ratio on the Age Entering School Data from the Personnel Inventory Record.-- The "t" ratio for the significant difference for the sixty successful and sixty unsuccessful prisoners who are inmates at the United States Penitentiary, Atlanta, Georgia, are presented in Table 24 above.

The mean for the successful group was 6.38, for the unsuccessful group it was 6.34 with a difference of .04 in favor of the successful group. The median for the successful group was 6.09, for the unsuccessful group it was 6.16, with a difference of .07 in favor of the successful group. The standard deviation for the successful group was 1.16, for the unsuccessful group it was .69 with a difference of .47 in favor of the successful group. The standard error of the mean for the successful group was .17, for the unsuccessful group it was .11 with a difference of .06 in favor of the successful group. The standard error of the difference between the means was .20.

The "t" was found to be .20. This "t" of .20 was not significant

TABLE 25

SIGNIFICANT DIFFERENCE BETWEEN AGE LEAVING SCHOOL DATA FROM THE
PERSONNEL INVENTORY RECORD

Groups	Mean	Median	Sigma	S. E.	S. E. of Mean	Diff. of Mean	"t"
Successful	13.98	14.30	2.26	.34	.52	.08	.15
Unsuccessful	13.90	13.89	2.53	.40			

for it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the two sets of age entering data was not statistically significant.

The "t" Ratio on the Age Leaving School Data from the Personnel Inventory Record.--The "t" ratio for the significant difference for the data on the age leaving school data from the Personnel Inventory Record for the sixty successful and sixty unsuccessful prisoners who are inmates at the United States Penitentiary, Atlanta, Georgia, are presented in Table 25 above.

The mean for the successful group was 13.98, for the unsuccessful group it was 13.90 with a difference of .08 in favor of the successful group. The median for the successful group was 14.30, for the unsuccessful group it was 13.89, with a difference of .41 in favor of the successful group. The standard deviation for the successful group was 2.26, for the unsuccessful group it was 2.53 with a difference of .27 in favor of the unsuccessful group. The standard error of the mean for the successful group was .34, for the unsuccessful group it was .40

TABLE 26

SIGNIFICANT DIFFERENCE BETWEEN GRADE COMPLETED DATA FROM THE
PERSONNEL INVENTORY RECORD

Groups	Mean	Median	Sigma	S. E.	S. E.	Diff.	"t"
					of Mean	of Mean	
Successful	5.76	5.93	2.00	.26			
					.39	1.58	4.05
Unsuccessful	4.18	4.30	2.13	.29			

with a difference of .06 in favor of the unsuccessful group. The standard error of the difference between the two means was .52.

The "t" was found to be .15. This "t" of .15 was not significant for it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the two sets of age leaving school data was not statistically significant.

The "t" Ratio on the Grade Completed Data from the Personnel Inventory Record.--The "t" ratio for the significant difference for the data on the grade completed data from the Personnel Inventory Record for the sixty successful and sixty unsuccessful prisoners who are inmates at the United States Penitentiary, Atlanta, Georgia, are presented in Table 26 above.

The mean for the successful group was 5.76, for the unsuccessful group. The median for the successful group was 5.93, for the unsuccessful group it was 4.18, with a difference of 1.58 in favor of the successful group. The standard deviation for the successful group was 2.00, for the unsuccessful group it was 2.13 with a difference of .13 in favor

TABLE 27

SIGNIFICANT DIFFERENCE BETWEEN JOB CHANGES IN PRISON DATA FROM THE
PERSONNEL INVENTORY RECORD

Groups	Mean	Median	Sigma	S. E.	S. E. of Mean	Diff of Mean	"t"
Successful	2.08	2.05	1.72	.25			
					.31	.05	.16
Unsuccessful	2.03	1.90	1.45	.19			

of the unsuccessful group. The standard error of the mean for the successful group was .26, for the unsuccessful group it was .29 with a difference of .03 in favor of the unsuccessful group. The standard error of the difference between the two means was .39.

The "t" was found to be 4.05. This "t" of 4.05 was significant for it was more than 2.58 at the one per cent level of confidence.

Therefore, the difference between the two sets of grade completed data was statistically significant.

The "t" Ratio on the Job Changes in Prison Data from the Personnel Inventory Record.--The "t" ratio for the significant difference for the data on the job changes in prison data from the Personnel Inventory Record for the sixty successful and sixty unsuccessful prisoners who are inmates at the United States Penitentiary, Atlanta, Georgia, are presented in Table 27 above.

The mean for the successful group was 2.08, for the unsuccessful group it was 2.03 with a difference of .05 in favor of the successful group. The median for the successful group was 2.05, for the unsuccessful group it was 1.90, with a difference of .15 in favor of the

TABLE 28

SIGNIFICANT DIFFERENCE BETWEEN VIOLATIONS OF INSTITUTION REGULATIONS
DATA FROM THE PERSONNEL INVENTORY RECORD

Groups	Mean	Median	Sigma	S. E.	S. E. of Mean	Diff. of Mean	"t"
Successful	1.83	0.75	2.93	.39			
					.47	.51	1.08
Unsuccessful	1.32	0.47	2.27	.27			

successful group. The standard deviation for the successful group was 1.72, for the unsuccessful group it was 1.45 with a difference of .27 in favor of the successful group. The standard error of the mean for the successful group was .25, for the unsuccessful group it was .19 with a difference of .06 in favor of the successful group. The standard error of the difference between the two means was .31.

The "t" was found to be .16. This "t" of .16 was not significant for it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the two sets of job changes in prison data was not statistically significant.

The "t" Ratio on the Violation of Institution Regulations Data from the Personnel Inventory Record.--The "t" ratio for the significant difference for the data on the Violation of Institution Regulations data from the Personnel Inventory Record for the sixty successful and sixty unsuccessful prisoners who are inmates at the United States Penitentiary, Atlanta, Georgia, are presented in Table 28 above.

The mean for the successful group was 1.83, for the unsuccessful group it was 1.32 with a difference of .51 in favor of the successful

TABLE 29

SIGNIFICANT DIFFERENCE BETWEEN TIMES IN PUNISHMENT QUARTERS DATA FROM
THE PERSONNEL INVENTORY RECORD

Groups					S. E.	Diff.	"t"
	Mean	Median	Sigma	S. E.	of Mean	of Mean	
Successful	.82	.38	1.37	.19			
					.29	.23	.80
Unsuccessful	1.05	.39	1.67	.22			

group. The median for the successful group was .75, for the unsuccessful group it was .47, with a difference of .28 in favor of the successful group. The standard deviation for the successful group was 2.93, for the unsuccessful group it was 2.27 with a difference of .66 in favor of the successful group. The standard error of the mean for the successful group was .39, for the unsuccessful group it was .27 with a difference of .12 in favor of the successful group. The standard error of the difference between the two means was .47.

The "t" was found to be 1.08. This "t" of 1.08 was not significant for it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the two sets of violation of institution regulations data was not statistically significant.

The "t" Ratio on the Times in Punishment Quarters Data from the Personnel Inventory Record.---The "t" ratio for the significant differences from the data on the times in punishment quarters data from the Personnel Inventory Record for the sixty successful and sixty unsuccessful prisoners who are inmates at the United States Penitentiary, Atlanta, Georgia, are presented in Table 29 above.

The mean for the successful group was .82, for the unsuccessful group it was 1.05, with a difference of .23 in favor of the unsuccessful group. The median for the successful group was .38 for the unsuccessful group it was .39, with a difference of .01 in favor of the unsuccessful group. The standard deviation for the successful group was 1.37, for the unsuccessful group it was 1.67 with a difference of .30 in favor of the unsuccessful group. The standard error of the mean for the successful group was .19, for the unsuccessful group it was .22 with a difference of .03 in favor of the unsuccessful group. The standard error of the difference between the two means was .29.

The "t" was found to be .80. This "t" of .80 was not significant for it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the two sets of times in punishment quarters data was not statistically significant.

The "t" Ratio on the Number of Medical Treatments Data from the Personnel Inventory Record.--The "t" ratio for the significant difference for the data on the number of medical treatments data from the Personnel Inventory Record for the sixty successful and sixty unsuccessful prisoners who are inmates at the United States Penitentiary, Atlanta, Georgia, are presented in Table 30, page 64.

The mean for the successful group was 2.35, for the unsuccessful group it was 1.56 with a difference of .79 in favor of the successful group. The median for the successful group was 2.50, for the unsuccessful group it was .54, with a difference of 1.96 in favor of the successful group. The standard deviation for the successful group was 2.06, for the unsuccessful group it was 2.78 with a difference of .72 in

TABLE 30

SIGNIFICANT DIFFERENCE BETWEEN NUMBER OF MEDICAL TREATMENTS DATA FROM
THE PERSONNEL INVENTORY RECORD

Groups	Mean	Median	Sigma	S. E.	S. E.	Diff.	"t"
					of Mean	of Mean	
Successful	2.35	2.50	2.06	.27			
					.45	.79	1.75
Unsuccessful	1.56	.54	2.78	.36			

favor of the unsuccessful group. The standard error of the mean for the successful group was .27, for the unsuccessful group it was .36 with a difference of .09 in favor of the unsuccessful group. The standard error of the difference between the two means was .45.

The "t" was found to be 1.75. This "t" of 1.75 was not significant for it was less than 2.58 at the one per cent level of confidence. Therefore, the difference between the two sets of number of medical treatments data was not statistically significant.

Resume of Findings

Prefatory Statement.---The quantitative measures basic to the analysis and interpretation of the data pertinent to this research which have been presented throughout this chapter are summarized in the series of summary Tables 31 through 34, pages 66 through 74 , with the specific content as indicated below.

1. Data on Standardized Tests: Achievement and intelligence, Tables 1 to 3.
2. Data from Personnel Inventory Record: background and prison-activities information, Tables 4 to 20.

3. Significant Differences between the successful and unsuccessful groups, Tables 21 to 30.
4. The Summary Tables of the basic statistics in Tables 31 through 34.

The Interpretative Summaries of the quantitative data in consolidated Tables 31 through 34, which, in turn, were derived from the 30 tables of the analysis and comparison of the basic data, as presented throughout this chapter, will be presented in the immediate sections to follow.

Interpretative Summaries

Introductory Statement.--The interpretative summaries for the data obtained in this study are presented in Tables 31 to 34 and under the captions: (a) Interpretative Summary of the Stanford Achievement Test, (b) Interpretative Summary of the United States Health Service Classification Test, (c) Interpretative Summary of Basic Data on Prior Schooling, (d) Interpretative Summary of Prison activities, (e) Interpretative Summary of Prisoners' Background, (f) Interpretative Summary of Significant Differences.

Interpretative Summary of the Stanford Achievement Test.--The data for the initial and final testing with the Stanford Achievement Test are summarized in Summary Table 31, page 66. The data from the initial test period showed the group later designated successful scores 1.35 grades below the prison required grade-placement of 5.0. The group later designated unsuccessful scored 2.43 grade-placements below the prison required grade placement of 5.0.

The data from the final test period showed that the group designated as "successful" showed a mean of .91 grade-placements above 5.0 and 2.26 grade-placements above the initial test mean. The group grade-

TABLE 31

SUMMARY OF BASIC DATA FROM THE STANDARDIZED TEST AND PERSONNEL INVENTORY
RECORD FOR THE SUCCESSFUL AND UNSUCCESSFUL PRISONERS

	<u>Successful</u>				<u>Unsuccessful</u>			
	<u>Mean</u>	<u>Median</u>	<u>Sigma</u>	<u>S. E.</u>	<u>Mean</u>	<u>Median</u>	<u>Sigma</u>	<u>S. E.</u>
Stanford Achievement Test (Initial Testing)	3.65	3.92	.92	.14	2.57	2.65	1.25	.19
Stanford Achievement Test (Final Testing)	5.91	5.49	1.05	.16	3.38	3.60	.96	.12
U. S. Health Service Classification Test I. Q's	93.60	95.50	10.90	1.63	86.15	82.84	12.00	1.80
Inventory Record								
Age Entering School	6.38	6.09	1.16	.17	6.34	6.16	.69	.11
Age Leaving School	13.98	14.30	2.26	.34	13.90	13.89	2.53	.40
Grade Completed	5.86	5.93	2.00	.26	4.18	4.30	2.13	.29
Job Changes in Prison	2.08	2.05	1.72	.26	2.03	1.90	1.45	.19
Violations of Institu- tion Regulations	1.83	.75	2.93	.39	1.32	.47	2.27	.27
Times in Punishment Quarters	.82	.38	1.37	.19	1.02	.39	1.67	.22
No. Medical Treatments	2.35	2.50	2.06	.27	1.56	.54	2.78	.36
<u>Psychological Treatment</u>								
<u>Times</u>	<u>Number</u>		<u>Per Cent</u>		<u>Number</u>		<u>Per Cent</u>	
1	2		3.33		0		0.00	
0	40		66.67		52		86.67	
Unknown	18		30.00		8		13.33	

placement of 5.0.

The data from the final test period showed that the group designated "successful" showed a mean that .91 grade-placements above 5.0 and 2.26 grade placements above the initial test mean. The group designated "unsuccessful" showed a mean grade placement that was 1.62 grade-placement below 5.0 and 8.81 grade-placements above the initial test mean.

Interpretative Summary of the United States Health Service Classification Test.--The data for the Intelligence Quotients from the United States Health Service Classification Test are summarized in Summary Table 31, page 66.

The data on the Intelligence Quotients showed that the group designated "successful" was 6.4 quotient points below the norm of 100, and that the group designated "unsuccessful" was 13.85 quotient points below the norm of 100.00.

Interpretative Summary of Basic Data on Prior Schooling.--The data on the prior schooling are summarized in Summary Table 31, page 66. These data show that both groups entered school at approximately six years of age which with the national norms for school entrance.

These data also show that both groups left school at approximately 14 years of age which is below the compulsory school age for most states.

The average grade completed by the group designated "successful" was 1.58 placements above the average grade-placement of the group designated "unsuccessful." This data also indicate that both groups were below the test norm of expectancy on the initial test and the "unsuccessful group remained below the test norm on the final test, The "successful group remained below the test norm on the final test. The "successful"

group was only slightly above the test norm on the final test.

Interpretative Summary of Prison Activities.--The data on prison activities from the Inventory Record are summarized in Summary Table 31, page 66.

These data revealed the following:

1. Both groups have changed jobs approximately twice.
2. The "successful" group averaged a little less than two violations of prison regulations, and the "unsuccessful" group average a little more than one violation.
3. Both groups averaged approximately one time in punishment quarters.
4. The "successful" group averaged .19 more medical treatments than the "unsuccessful" group.
5. Both indicated that they had very little psychological treatment.

Interpretative Summary of Prisoner's Background.--The data on the prisoner's background for the Inventory Record are summarized in Table 33, page 71.

These data revealed the following:

1. The majority did not come from slum areas.
2. Most of them did come from broken homes.
3. Most of them did not have juvenile records of crime
4. Most of them did have adult records of crime
5. The largest group came from urban areas and rural areas, and the smallest number came from small cities.
6. Marital status the largest group of responses indicated that they were married. The second largest group indicated single.
7. The occupation engaged in by the largest group was laborer. The second largest group was shared by skilled laborer and farmer.
8. The crime for the last conviction of the prisoners indicated that the largest number was for narcotics. The next two in order of magnitude was liquor and interstate transportation of stolen cars.

TABLE 32

SUMMARY OF BASIC DATA FOR TOTAL GROUP AND SIGNIFICANT DIFFERENCES FOR SUCCESSFUL AND UNSUCCESSFUL PRISONERS

	Mean	Total Median	Sigma	S. E.	Difference between Successful and Unsuccessful			
					S. E. of		Diff. of Mean	n _t
					M ₁	M ₂		
Stanford Achievement Test (Initial Testing)	-	-	-	-	.24		1.08	4.50
Stanford Achievement Test(Final Testing)	-	-	-	-	.20		2.53	12.65
U. S. Health Service Classification Test (I.Q.)	89.45	90.65	12.30	1.13	2.43		7.45	3.07
Inventory Record								
Age Entering School	6.36	6.13	.97	.10	.20		.04	.20
Age Leaving School	13.94	14.11	2.42	.26	.52		.08	.15
Grade Completed	4.99	5.27	1.95	.18	.39		1.58	4.05
Job Changes in Prison	2.05	1.96	1.57	.14	.31		.05	.16
Violations of Institution								
Regulations	1.56	.59	2.63	.24	.47		.51	1.08
Times in Punishment								
Quarters	.95	.39	1.63	.16	.29		.23	.80
No. Medical Treatments	1.83	1.15	2.41	.20	.45		.79	1.75
Psychological Treatment								
<u>Times</u>	<u>Number</u>		<u>Per Cent</u>					
1	2		1.67					
0	92		96.67					
Unknown	26		21.67					

Interpretative Summary of the Correspondence of Types of Crimes

With Intelligence and Achievement.--The data on the correspondence of types of crimes with intelligence and achievement are summarized in Table 35, page 74. These data revealed that for crimes of higher incidence for groups, the highest median intelligence was for interstate transportation of stolen cars for the "successful" group. However, forgery liquor and bank robbery indicated intelligence quotients that were very close to the above crime.

Median intelligence for the "unsuccessful" group indicated illegal liquor crimes were committed by criminals with the highest median intelligence quotient for this group.

The highest median grade-placement for the "successful" group was for the crime of narcotics and forgery.

Interpretative Summary of Significant Differences.--The data on the significance of the differences between the "successful" and "unsuccessful" groups are presented in Summary Table 32, page 69.

These data indicate the following:

1. The "successful" group scored higher on the initial and final achievement tests.
2. The intelligence of the "successful" group was significantly higher than the intelligence of the "unsuccessful" group.
3. The grade completed by the "successful" group, was significantly higher than the grade completed by the "unsuccessful" group.
4. The other paired variables of prior schooling, activities in prison were statistically insignificant differences.

TABLE 33

SUMMARY OF YES - NO RESPONSES FROM THE PERSONNEL INVENTORY RECORD

	<u>Yes</u>			<u>No</u>			<u>Unknown</u>			<u>Yes</u>			<u>No</u>			<u>Unknown</u>		
	No.	Per	Ct.	No.	Per	Ct.	No.	Per	Ct.	No.	Per	Ct.	No.	Per	Ct.	No.	Per	Ct.
Environment																		
Slum																		
Area	9	15.00		43	71.67		8	13.33		8	13.33		42	70.00		10	16.67	
Broken Homes	33	55.00		15	25.00		12	20.00		28	46.67		22	36.67		10	16.67	
Juvenile Record	19	31.67		39	65.00		2	3.33		18	30.00		42	70.00		0	0.00	
Adult Record	50	100.00		0	0.00		0	0.00		54	90.00		6	10.00		0	0.00	

TABLE 34

72

SUMMARY OF BACKGROUND DATA FROM THE PERSONNEL
INVENTORY RECORD

	No.	Per Cent	No.	Per Cent	No.	Per Cent
Size of Town						
Small Town	11	18.33	10	13.33	21	
Small City	6	10.00	2	3.33	8	
Urban	26	43.33	14		40	
Rural	17	28.33	29	48.33	46	
Unknown	0	0.00	5	8.33	5	
Marital Status						
Single	15	25.00	17	28.33	32	26.67
Married	27	45.00	28	46.67	55	45.83
Divorced	10	16.67	2	3.33	12	10.00
Separated	5	8.33	4	6.67	9	7.50
Widower	1	1.67	0	0.00	1	.83
Unknown	2	3.33	9	15.00	11	9.17
Occupation Prior to Prison						
Laborer	21	35.00	22	36.67	43	33.83
Skilled Laborer	13	21.67	8	13.33	21	17.50
Farmer	8	13.33	13	21.67	21	17.50
Truck Driver	4	6.67	5	8.33	9	7.50
Service Occup.	4	6.67	1	1.67	5	4.17
Barber	0	0.00	3	5.00	3	2.50
Never Worked	1	1.67	4	6.67	5	4.17
Types of Crimes						
Narcotics	8	13.33	12	20.00	20	16.67
Liquor	3	5.00	16	26.67	19	15.83
Interstate Transportation of						
Stolen Cars	12	20.00	3	5.00	15	12.50
Forgery	8	13.33	2	3.33	10	8.33
Auto Theft	3	5.00	5	8.33	8	6.67
Burglary	4	6.67	2	3.33	6	5.00
Fraud	5	8.33	2	3.33	7	5.83

TABLE 35

TYPES OF CRIME WITH DATA ON INTELLIGENCE FOR THE SUBJECTS OF THIS RESEARCH *

Types of Crimes	Successful					Unsuccessful				
	No.	I. Q. Range	I. Q. Median	G. P. Range	G. P. Median	No.	I. Q. Range	I. Q. Median	G. P. Range	G. P. Median
Interstate Transportation of Stolen Cars	12	68-108	97	5.0-8.2	5.5	-	-	-	-	-
Narcotics	8	76-98	88	5.2-8.9	5.9	13	74-101	82	2.2-4.7	3.9
Forgery	9	83-118	96	5.0-6.4	5.3	6	73-111	80.5	3.3-4.6	3.9
Bank Robbery	4	92-99	98	5.2-5.7	5.5	1	91	91	2.6	2.6
Liquor	4	91-114	96	5.2-6.3	5.4	22	66-103	87	1-4.9	2.89
Internal Revenue	2	89-101	95	5.1-5.5	5.3	0	-	-	-	-
Fraud	2	86-107	97	5.4-6.2	5.8	0	-	-	-	-
Fire Arms	1	110	110	6.2	6.2	0	-	0	-	-
Kidnapping	1	83	83	5.0	5.0	0	-	-	-	-
Robbery	5	70-114	95	5.5-9.8	5.7	2	94-96	95	3.9-4.2	4.05
Auto Theft	2	96-104	100	6.1-7.9	7.0	9	73-106	77	2.1-4.5	3.4
Military Violation	1	83	83	5.2	5.2	0	-	-	-	-
Probation Violation	3	73-104	101	5.0-9.4	8.1	1	76	76	4.0	4.0
Violation of Mann Act	1	89	89	7.7	7.7	2	99	99	3.7-4.9	4.3
Counterfeit	1	98	98	5.0	5.0	0	-	-	-	-
Mail Theft	2	74-85	79.5	5.0-5.1	5.05	0	-	-	-	-
Stolen Securities	1	114	114	5.5	5.5	0	-	-	-	-
Hit and Run	1	99	99	5.1	5.1	0	-	-	-	-
Burglary	0	-	-	-	-	2	61-73	67	1-3.0	1.6
Conspiracy	0	-	-	-	-	1	111	111	3.3	3.3
Rape	0	-	-	-	-	1	76	76	1	1

* The number of cases of various crimes in this table may not agree with the cases in Table 19, because certain categories of crimes were combined.

CHAPTER III

SUMMARY AND CONCLUSIONS

Rationale.---For as long as man has inhabited the earth there have been occasions, with social organizations, when his conflict with law, customs and mores resulted in some form of expiation. Treatment and/or punishment was carried out within the demands of a utilitarian background. Goodness was based on its usefulness to the group. Usually concerted action would occur only when the greatest happiness to the greatest number was threatened. It appears that this attitude of expiation and utilitarianism is basic to the offenders.

It was observed that primitive punishment was inflicted either to remove the strain of impurity from society or to prevent a supernatural being from taking revenge on the tribe.¹ This attitude is reflected in Biblical history, although somewhat mythic, when Adam and Eve were exiled. Likewise, they ostracised Cain for murdering his brother.

From the beginning of time the punishment for the breaking of taboos was carried out with great severity. "In primitive society there is no written law...Nevertheless, it has a method of enforcing sanctioned modes of conduct which is probably more powerful and vigilant than any

¹ Harry Elmer Barnes, The Story of Punishment (Boston: The Stratford Company, 1950), p. 38.

written code which man has ever devised. This practically omnipotent force is custom."¹

Barnes succinctly desolves this over-awing and excoriating punishment of the offender to social custom, thusly:

The punishment of the breaking of taboos, particularly that against endogamy, and of witch-craft, was, as might be expected, carried out with great severity. The whole group (tribe or village, including all the neighboring clans or the whole village, turned out to eliminate the criminal with the greatest expedition. the offender might be backed to pieces in the frenzy which overcomes the mob or otherwise brutally but surely exterminated. He might even be eaten. The wife and children of the witch or sorcerer were² also killed and his house burned. All taint was thus removed.

The coward suffered gross humiliation or corporal punishment usually, rather than death. Exile was very frequently ordered.³ Thus did society in the earlier days deal with those who threatened the security of the group.

"To punish or repress crimes of a private nature the earliest society had no developed organs--so it was left to be settled by private means."⁴ In other words, the disposition of private grievances were purely persoal matters, This attitude, of course, prevailed to some extent even to modern times. It may be reflected in European and early American Duels.

¹ Barnes, op. cit., p. 38.

² Ibid.

³ Ibid., p. ff.

⁴ Ibid.

From this early beginning, the treatment of offenders evolved, concomitantly, through flogging, mutilation, branding, stocks and pillory, and other sundry punishments. And this is not meant to imply that some of these means are not still used in isolated situations.¹

The most important figure in arousing British interest in the atrocious treatment of criminals in the latter half of the eighteenth century was John Howard (1726-1791).² Howard, along with, Elizabeth Fry and Jermy Benthan, in England, and the Philadelphia Quakers, took the lead in prison reform. A great name in penal reform is that of the Italian, Beccaria, whose work on Crime and Punishments, appeared in 1774.³ The general abolition of torture and of such punishments as burning alive, breaking on the wheel, and drawing and quartering followed Becarrias' work.⁴ The British criminal code was completely transformed between 1820 and 1861. During this period the death penalty was abolished for two hundred and twenty-two offenses, including the death penalty for stealing five shillings worth of goods from a shop.⁵

¹ Harry E. Barnes and Negley K. Teeters, New Horizons in Criminology (New York: Prentice Hall, Incorporated, 1946), p. lll.

² Hutton Webster, History of Mankind (Boston: D. C. Heath and Company, 1928), p. 625.

³ Ibid., p. 625 ff.

⁴ Barnes, op. cit., p. 102.

⁵ Ibid., p. lll.

Reform of the criminal code in America had its germinal center in Pennsylvania at the close of the eighteenth century. The innovations in Pennsylvania stimulated other states to follow her example, and within a half century following the Declaration of Independence all of the American states had abolished the older and barbarious methods of corporal punishment and substituted imprisonment therfor.¹

The reform of criminal law was concomitant with the arise and development of prisons. The establishment of the Pennsylvania and Auburn Systems of prison discipline in the first quarter of the nineteenth century attracted world-wide interest, and in 1832 William Crawford (1788-1847) was sent to America to investigate and report on these American prison systems.² It was a struggle between these two systems which colored the whole development of prison discipline during the first half of the nineteenth century. The Pennsylvania System involved the use of congregate confinement and proved a failure, but, stimulated the Auburn System's solitary confinement, which appeared to promise nothing better.³ Then the Elmira Reformatory system developed. It was in this system that the first concern was manifested for the observation of the prisoner on the road to ultimate reformation. Reformation rather than either retaliation or deterrence was the plan.

"The Federal system of penal institutions, an excellent example of a planned and well-integrated concept of penalpphilosophy, reasonably

¹ Webster, op. cit.

² Barnes, op. cit., p. 108.

³ Ibid., p. 136.

progressive in nature, serves as a pattern for the states in planning or revamping their system.¹ The acid test of a prison is its program and philosophy. A program without a philosophy and without definite objectives is empty of value...."² It is hoped that this study will have significance, in some small manner, for this widespread search for more adequate prison programs.

Evolution of this Problem.--It was observed that at the Atlanta Federal Penitentiary, compulsory school was recently (October 1, 1954) started for all prisoners, with certain limitations who tested below the fifth-grade level of achievement. It is indicated that many of these men made remarkable progress, while others are very unsuccessful in the program. This proposed problem of research stems from an interest in obtaining a composite and objective appraisal of the worthwhileness of this educational program within the overall rehabilitation program of the prisoners.

Contribution to Educational Thought and Practice.--The writer hopes that the study will have value for the institution in having its relatively new program evaluated. Secondaly, it is hoped that some of the findings will have value for the prisoners and for their educational rehabilitation. Next, it is hoped that the study will contribute to others who may plan a similar program. And finally, it is hoped that it will have value to the field of education; and, particularly, to the theories on educational retardation; attitudes toward forcing persons

¹ Barnes and Teeters, op. cit., p. 674.

²James V. Bennett, "Evaluating a Prison," The Annals of the American Academy of Political and Social Science (May, 1954), pp. 45-46.

to attend school.

Statement of the problem.--The problem involved in this study was to determine the differences, if any, between one group of educationally retarded prisoners who made poor progress and another group who made good progress in the Compulsory School Program at the United States Penitentiary, Atlanta, Georgia, 1954-1958.

Limitation and Scope of Study.--The primary concern of this research was to identify the indices of central tendency and variability for intelligence and school achievement for a group of unsuccessful prison school students with reference to whatever significant differences which might be observed between the performance of these two groups on the variables of intelligence, achievement, and in other institutional relationships. The study is necessarily limited to the identification of any differences discovered--with no attempt to analyze the causative factors involved--with the interpretation restricted to the identification of educational implications.

Purpose of the Study.--The overall/major purpose of this study was: (a) to ascertain the differences, if any, in school achievement, personal adjustment, and family background between two groups of prisoners who were forced to attend the Prison School in order to raise their educational status; and ultimately designated "successful" and "unsuccessful" groups with reference to their achievement; and (b) to obtain the levels of intelligence and achievement of the two groups of prisoners with reference to selected categories of crime.

More specifically, the purposes of this research were as follows:

1. To determine the measures of central tendency and

variability of intelligence of the respective groups as measured by the United States Health Service Classification Test.

2. To determine the measures of central tendency and variability in academic achievement of the respective groups as measured by the Stanford Achievement Test.
3. To determine the measures of central tendency and variability of selected aspects of the personal and social background of the respective groups as measured by the "ratings" on the Personnel Inventory Record.
4. To determine the measures of central tendency and variability in the "institutional-adjustment" of the respective groups as measured by "ratings" on the Personnel Inventory Record.
5. To obtain the levels of intelligence of the respective groups classified as to crime commitment record as measured by the United States Health Service Classification Test.
6. To formulate any significant implications for educational theory and practice as may be derived from the analysis and interpretation of the data.
7. Definition of Terms.--Significant terms used throughout this

study are characterized as follows:

1. "Offense" as used in this study refers to the deed or act committed by the subject which resulted in his conviction.
2. "Criminal," "prisoner," "subject," or "inmate," as used synonymously in this study refer to any one who has been convicted of a crime by the Federal Courts.
3. "Intelligence," as was used in this study refers to the traits of mental development as measured by the United States Public Health Classification Test.
4. "Achievement," as was used in this study refers to the level of school accomplishment as measured by the Stanford Achievement Test (Primary, Elementary, Intermediate and Advanced Batteries).
5. "Retardation," as was used in this study refers to the phenomenon of either slow progress through the school grades or school failure.

Locale and Research Design.--The significant aspects of the locale

and research design of this study are characterized below.

Locale of Study.--This study was conducted at the United States Federal Penitentiary, Atlanta, Georgia, during the scholastic year of 1958-1959. This institution plays a major role in the Federal Prison System's responsibility for custody, care, and treatment of the thousands of persons convicted and sentenced here for violations of Federal laws. It is one of thirty varied types of correctional institutions operated by the Federal Bureau of Prisons. It was authorized by Congress in 1891 but construction was delayed several years because of lack of funds. It received its first prisoners in 1902, according to Bureau of Prison Publication, Department of Justice, July 16, 1951. During this year the population reached more than twenty-seven hundred men. It was built to house only two thousand prisoners.

This institution is similar in many ways to any ordinary community. Its Power Plant and Electric Generating equipment, its large industries (Cotton Factory), Laundry, Library, Maintenance Shops, Farms, Dairy, Kitchen, Dining Rooms, Bakery School, Hospital, Business Office, Recreation Area, Chapel, Living Quarters, Shoe Repair Shop, and Garages are elements common to every community. There are about twenty-seven hundred prisoners and four hundred and thirteen officers and staff members who supervise and direct the work of the prison.

The period of this study began in July of 1958, ran through the summer months and the regular 1958-1959 school year and closed during the month of July of the 1959 school summer quarter.

Method of Research.--The Descriptive-Survey Method of research, employing techniques of test scores, inventory ratings, official records,

and the statistical analysis thereof, was used to gather, analyze, and interpret the data for this study.

Description of Subjects.--The subjects used in this study were one hundred twenty (120) prisoners who were compelled to attend school at the Atlanta Federal Penitentiary because Achievement test results, ascertained on admission to this institution, revealed that their grade-placement was below 5.0; sixty of these subjects were considered unsuccessful because they did not achieve the goal of 5.0 set by the Penitentiary staff. The remaining sixty were considered successful because they had achieved a grade level of 5.0 or more. It was indicated that an average of two hundred forty (240) subjects per year have participated in this program over the past four school years. Fifteen successful subjects and fifteen unsuccessful subjects were selected at random from each of the four years described. These were male prisoners from every section of the United States. Forty-six of these men had rural backgrounds, forty were reared in urban areas, twenty-one were reared in small towns, eight were reared in small cities and the community background of five were unknown. Seventeen were products of slum areas. The I. Q. of these subjects ranged from a low of sixty-one to a high of one hundred eighteen, according to the United States Public Health Service Test. These subjects had committed the following Federal offenses: Robbery, Interstate transportation of stolen property, internal revenue, liquor laws, fraud, forgery, violating the fire arms act, narcotics, kidnapping, military offenses, violating the Mann Act, counterfeiting, mail theft, and rape (Military or on Government reservation). The chronological ages ranged from a low of twenty-six

years to a high of fifty-eight years.

Description of Instruments.--The instruments used to gather the data for this study are identified below.

1. The Stanford Achievement Test, primary, elementary, and in some cases intermediate and advanced batteries, Forms J. L., 1954 edition was used. These tests were devised by Truman Kelley, Richard Madden, Erick Gardner, Lewis Terman and Biles Ruch. They were designed to measure the important knowledges, skills, and understandings commonly accepted as desirable outcomes of the major branches of elementary curriculum.
2. The United States Health Service Classification Test (Federal Penal and Correctional Institutions). This is a non-verbal test of non-verbal intelligence, administered to groups, by the Education Department staff, and interpreted by the Clinical Psychologist.
3. A questionnaire which was designed and used in the relationship with the personal interview in order to secure certain data.
4. A specially designed schedule consisted of necessary categories to cover various aspects of the subjects' socio-economic status and information concerning institutional adjustment.
5. Official confidential records, which included a variety of information. The information with which we will be mainly concerned is the social case history. Official Court records and information concerning institutional adjustment including discipline, job changes, visiting and correspondence records,

Criterion of Reliability.--The criterion of reliability for the statistics was established as a Fisher's "t" of 2.68 at one per cent level of confidence and 118 degrees of freedom.

Method of Procedure.--The procedural steps in conducting this research were as follows:

1. The related literature pertinent to this study was reviewed, summarized, and presented in the finished thesis.
2. The proper permission to conduct the study was secured from proper administration sources.
3. The official records of one hundred and twenty (120) prisoners involved in this study were studied for pertinent data on their

achievement, background and prison activities.

4. The data derived from tests, official records, was assembled in appropriate tables and in turn, statistically treated.
5. The necessary statistical measures computed were the mean, standard deviation, standard error of the mean, the standard errors of the differences between the two means, and Fisher's "t".
6. The formulation of the Findings, Conclusions, Implications, and Recommendations, stemming from the analysis and Interpretation for incorporation in the finished thesis copy.

Collection of Data.---Permission was acquired from the Warden of the United States Penitentiary, Atlanta, Georgia, to do this research on the educational program established for prisoners whose grade levels was below 5.0. The Warden made available certain official records. These records included information concerning the prisoners community and prison history. The educational records included Stanford Achievement Test results on all prisoners. A questionnaire was designed and used in relationship with the personal interview with the Supervisor of education and other Staff members concerning the organization and operation of the department. A schedule was designed including categories concerning intelligence achievement, family background, personal background, institutional adjustment and criminal history. The Institution was visited on ten occasions and data was transferred from the official records to the schedule.

Summary of Literature.---A review of the related literature pertinent to this study is presented in the condensed general statements immediate to follow.

1. E. Harmes states that intelligence is only one of the powers of our mental life and only one form of expression of our power of thinking.
2. Barnes says what a prisoner becomes upon his release depends upon

the success he achieves in his educational program.

3. McCormick, states that prison education should be individualized and adultized. The prisoner should be considered primarily an adult in need of education and only secondarily as a criminal in need of reform.
4. According to Sutherland, the Problem of Prison education is essentially a problem of socialization.
5. Chassell states that low intelligence is among the most important factors conditioning the tendency toward dishonesty.
6. Sheldon and Glueck view retardation as slow progress through the grades resulting from being held back, from school failure.
7. According to one observation during the proceedings of the Eighty-Sixth Annual Congress of Correction, The American Correction Association, education is a vital force in the reformation of fallen men.
8. Sutherland reports that broken homes are an important factor for delinquency.
9. Betts asserts that "the teacher's first concern in dealing with pupils is to determine their need in terms of level of achievement."
10. Sherman states that the intelligence of a child also influences the characteristic trait he develops.
11. Richards stated that satisfaction and achievement with approval by others bear a definite relation to inborn and acquired assets of intellectual and emotional nature.

Basic Findings

Organization.--The summary of the data pertinent to this research on the comparison of mental ability, and background and prison activities of the successful and unsuccessful prisoners who are inmates at the United States Penitentiary, Atlanta, Georgia, are presented in separate and appropriate captions in the paragraphs below.

Achievement levels on the Stanford Achievement Test (Initial Testing)
For The Successful and Unsuccessful Groups of
Prisoners
(Tables 1 and 21)

On the variable of total achievement the following measures were obtained: For the successful group a mean of 3.65, a median of 3.92, a standard deviation of .92, and a standard error of the mean .14; whereas, for the unsuccessful group a mean of 2.57, a median of 2.65, a standard deviation of 1.25, and a standard error of the mean of .19. The two groups showed a difference between the means of 1.08, and a standard error of the difference between two means of .24 to indicate a "t" of 4.50 which was significant.

Achievement levels on the Stanford Achievement Test (Final Testing)
For the Successful and Unsuccessful Groups of Prisoners
(Tables 2 and 22)

On the variable of total achievement the following measures were obtained: For the successful group a mean of 5.91, a median of 5.49, a standard deviation of 1.05, and a standard error of the mean of .16; whereas, for the unsuccessful group a mean of 3.38, a median of 3.60, a standard deviation of .96, and a standard error of the mean of .12. The two groups showed a difference between the two means of 2.53, and a standard error of the difference between the two means of 2.53, and a standard error of the difference between the two means of .20 to indicate a "t" of 12.65 which was significant.

Mental Ability levels on the United States Health Service Classification
Test For the Successful and Unsuccessful Groups of Prisoners
(Tables 3 and 23)

On the variable of intelligence quotients the following measures were obtained: For the successful group a mean of 93.60, a median of 95.50, a standard deviation of 10.90, and a standard error of the mean 1.63; whereas, for the unsuccessful group a mean of 86.15, a median of 82.84, a standard deviation of 12.00, and a standard error of the mean of 1.80. The two groups showed a difference between the two means of 7.45, and a standard error of the difference between the two means of 2.43 to indicate a "t" of 3.07 which was significant.

Background and Prison Activities Data From the Personnel Inventory
Record

Data on Age Entering School For the Successful and Unsuccessful
Groups of Prisoners
(Tables 4 and 24)

On the variable of age entering school the following measures were obtained: For the successful group a mean of 6.38, a median of 6.09, a standard deviation of 1.16, and a standard error of the mean .17; whereas

for the unsuccessful group a mean of 6.34, a median of 6.16, a standard deviation of .69, and a standard error of the mean of .11. The two groups showed a difference between the two means of .04, and a standard error of the difference between the two means of .20 to indicate a "t" of .20 which was not significant .

Data on Age Leaving School For the Successful and Unsuccessful
Groups of Prisoners
(Tables 5 and 25)

On the variable of age leaving school the following measures were obtained: For the successful group a mean of 13.98, a median of 14.30, a standard deviation of 2.26, and a standard error of the mean of .34; whereas, for the unsuccessful group a mean of 13.90, a median of 13.89, a standard deviation of 2.53, and a standard error of the mean of .40. The two groups showed a difference between the two means of .08, and a standard error of the difference between the two means of .52 to indicate a "t" of .15 which was not significant.

Grade Completed Data For the Successful and Unsuccessful Groups of
Prisoners
(Tables 6 and 26)

On the variable of Grade completed the following measures were obtained: For the successful group a mean of 5.76, a median of 5.93, a standard deviation of 2.00, and a standard error of the mean .26; whereas, for the unsuccessful group a mean of 4.18, a median of 4.30, a standard deviation of 2.13, and a standard error of the mean of .29. The two groups showed a difference between the two means of 1.58, and a standard error of the difference between the two means of .39 to indicate a "t" of 4.05 which was significant.

Job Changes in Prison Data For the Successful and Unsuccessful
Groups of Prisoners
(Tables 7 and 27)

On the variable of job changes in prison the following measures were obtained: For the successful group a mean of 2.08, a median of 2.05, a standard deviation of 1.72, and a standard error of the mean of .25; whereas, for the unsuccessful group a mean of 2.03, a median of 1.90, a standard deviation of 1.45, and a standard error of the mean of .19. The two groups showed a difference between the two means of .05, and a standard error of the difference between the two means of .31 to indicate a "t" of .16 which was not significant.

Violations of Institutional Regulations Data For the Successful
and Unsuccessful Groups of Prisoners
(Tables 8 and 28)

On the variable of violations of institutional regulations the following measures were obtained: For the successful group a mean of 1.83, a median of .75, a standard deviation of 2.93, and a standard error of the mean .39; whereas, for the unsuccessful group a mean of 1.32, a median of .47, a standard deviation of 2.27, and a standard error of the mean of .27. The two groups showed a difference between the two means of .51 and a standard error of the difference between the two means of .47 to indicate a "t" of 1.08 which was not significant.

Times in Punishment Quarters Data For the Successful
and Unsuccessful Groups of Prisoners
(Tables 9 and 29)

On the variable of times in punishment quarters the following measures were obtained: For the successful group a mean of .82, a median of .38, a standard deviation of 1.37, and a standard error of the mean of .19; whereas, for the unsuccessful group a mean of 1.05, a median of .39, a standard deviation of 1.67, and a standard error of the mean of .22. The two groups showed a difference between the two means of .23, and a standard error of the difference between the two means of .29 to indicate a "t" of .80 which was not significant.

Number of Medical Treatments Data For the Successful
and Unsuccessful Groups of Prisoners
(Tables 10 and 30)

On the variable of number of medical treatments the following measures were obtained: For the successful group a mean of 2.35, a median of 2.50, a standard deviation of 2.06, and a standard error of the mean .27; whereas, for the unsuccessful group a mean of 1.56, a median of .54, a standard deviation of 2.78, and a standard error of the mean of .36. The two groups showed a difference between the two means of .79, and a standard error of the difference between the two means of .45 to indicate a "t" of 1.75 which was not significant.

Number of Psychological Treatments Data For the Successful and
Unsuccessful Prisoners
(Table 11)

For the variable of number of psychological treatments the following data were obtained: For the successful group 3.33 per cent had one treatment, 40 or 66.67 per cent had no treatment, and 18 or 30.00 per

cent registered "unknown". For the unsuccessful group 52 or 86.67 per cent had one treatment, and 8 or 13.33 per cent registered "unknown".

**Environment; Slum Area Data For the Successful and Unsuccessful
Prisoners
(Table 12)**

For the variable of was the environmental Slum area the following data were obtained: For the successful group 9 or 15.00 per cent registered "yes", 43 or 71.67 per cent registered "no", and 8 or 13.33 per cent registered "unknown". For the unsuccessful group 8 or 13.33 per cent registered "yes", 42 or 70 per cent registered "no", and 10 or 16.67 per cent registered "unknown".

**Size of Town Data For the Successful and Unsuccessful Prisoners
(Table 13)**

On the variable of size of town the following data were obtained: For the successful group the size of the town showed 6 or 10.00 per cent for small city, 26 or 43.33 per cent for urban area, 17 or 28.33 per cent for rural area, and 11 or 18.33 per cent for small town. For the unsuccessful group the size of the town showed 2 or 3.33 per cent for small city, 29 or 48.33 per cent for rural area, 14 or 23.33 per cent for urban area, and 10 or 16.67 per cent for small town.

**Broken Homes Data For the Successful and Unsuccessful
Prisoners
(Table 14)**

On the variable of broken homes the following data were obtained: For the successful group 33 or 53.00 per cent registered "yes", 15 or 25.00 per cent registered "no", and 12 or 20.00 per cent registered "unknown". For the unsuccessful group 28 or 46.67 per cent registered "yes", 22 or 36.67 per cent registered "no", and 10 or 16.67 per cent registered "unknown".

**Marital Status Data For the Successful and Unsuccessful
Prisoners
(Table 15)**

On the variable of marital status the following data were obtained: For the successful group 1 or 1.67 per cent was a widower, 27 or 45.00 per cent were married, 5 or 8.33 per cent were separated, 10 or 16.67 per cent were divorced, and 15 or 25.00 per cent were single. For the unsuccessful group 2 or 3.33 per cent were divorced, 28 or 46.67 per cent were married, 4 or 6.67 per cent were separated, and 17 or 28.33 per cent were single.

Occupation Prior to Prison Data For the Successful
and Unsuccessful Prisoners
(Table 16)

On the variable of occupation prior to prison the following data were obtained: For the successful group 21 or 35.00 per cent were laborers, 4 or 6.67 per cent were truck drivers, 4 or 6.67 per cent were in service occupations, 8 or 13.33 per cent were farmers, 13 or 21.67 per cent were skilled laborers. For the unsuccessful group 22 or 36.67 per cent were laborers, 5 or 8.33 per cent were truck drivers, 13 or 21.67 per cent were farmers, 8 or 13.33 per cent were skilled laborers, and 3 or 5.00 per cent were barbers.

Juvenile Crime Record Data For the Successful and
Unsuccessful Prisoners
(Table 17)

On the variable of juvenile crime record the following data were obtained: For the successful group 19 or 31.67 per cent registered "yes", 39 or 65.00 per cent registered "no", and 2 or 3.33 per cent registered "unknown". For the unsuccessful group 18 or 30.00 per cent registered "yes", and 42 or 70.00 per cent registered "no".

Adult Crime Record Data For the Successful and
Unsuccessful Prisoners
(Table 18)

On the variable of adult crime record the following data were obtained: For the successful group all 60 or 100.00 per cent registered "yes". For the unsuccessful group 54 or 90.00 per cent registered "yes", and 6 or 10.00 per cent registered "no".

Types of Crime Data For the Successful and
Unsuccessful Prisoners
(Table 19)

On the variable of types of crime the following data were obtained: For the successful group 12 or 20.00 per cent were interstate transportation of stolen cars, 8 or 13.33 per cent were for narcotics and forgery, 5 or 8.33 per cent were for bank robbery and fraud, 4 or 6.67 per cent were burglary, and 3 or 5.00 per cent were liquor. For the unsuccessful group 16 or 26.67 per cent were liquor, 12 or 20.00 per cent were narcotics, 5 or 8.33 per cent were auto theft, and 3 or 5.00 per cent were interstate transportation of stolen cars.

Interpretative Summary of the Stanford Achievement Test

The data from the initial test period showed the group later designated successful scores 1.35 grades below the prison required grade-placement of 5.0. The group later designated unsuccessful scored 2.43 grade-placements below the prison required grade-placement of 5.0. The data from the final test period showed that the group designated as "successful" showed a mean of .91 grade-placements above 5.0 and 2.26 grade-placements above the initial test mean. The group grade-placement of 5.0. The data from the final test period showed that the group designated "successful" showed a mean of .91 grade-placements above 5.0 and 2.26 grade-placements above the initial test mean. The group designated "unsuccessful" showed a mean grade-placement that was 1.62 grade-placement below 5.0 and .81 grade-placements above the initial test mean.

Interpretative Summary of the United States Health Service Classification Test

The data on the Intelligence Quotients showed that the group designated "successful" was 6.4 quotient points below the norm of 100, and that the group designated "unsuccessful" was 13.85 quotient points below the norm of 100.

Interpretative Summary of Basic Data on Prior Schooling

These data show that both groups entered school at approximately six years of age which with the national norms for school entrance. These data also show that both groups left school at approximately 14 years of age which is below the compulsory school age for most states. The average grade completed by the group designated "successful" was 1.58 placements above the average grade-placement of the group designated "unsuccessful". This data also indicate that both groups were below the test norm of expectancy on the initial test and the "unsuccessful" group remained below the test norm on the final test. The "successful" group was only slightly above the test norm on the final test.

Interpretative Summary of Prison Activities

These data revealed the following:

1. Both groups have changed jobs approximately twice.
2. The "successful" group averaged a little less than two violations of prison regulations, and the "unsuccessful" group average a little more than one violation.
3. Both groups averaged approximately one time in punishment quarters.

4. The "successful" group averaged .19 more medical treatments than the "unsuccessful" group.
5. Both indicated that they had very little psychological treatment.

Interpretative Summary of Prisoners' Backgrounds

These data revealed the following:

1. The majority did not come from slum areas.
2. Most of them did come from broken homes.
3. Most of them did not have juvenile records of crime.
4. Most of them did have adult records of crime.
5. The largest group came from urban areas and rural areas, and the smallest number came from small cities.
6. On marital status the largest group of responses indicated that they were married. The second largest group indicated single.
7. The occupation engaged in by the largest group was laborer. The second largest group was shared by skilled laborer and farmer.
8. The crime for the last conviction of the prisoners indicated that the largest number was for narcotics. The next two in order of magnitude was liquor and interstate transportation of stolen cars.

Interpretative Summary of the Correspondence of Types of Crimes With Intelligence and Achievement

These data revealed that for crimes of higher incidence for groups, the highest median intelligence was for interstate transportation of stolen cars for the "successful" group. However forgery, liquor and bank robbery indicated intelligence quotients that were very close to the above crime. Median intelligence for the "unsuccessful" group indicated illegal liquor crimes were committed by criminals with the highest median intelligence quotient for this groups. The highest median grade-placement for the "successful" group was for the crime of narcotics; whereas for the "unsuccessful" group it was for the crimes of narcotics and forgery.

Interpretative Summary of Significant Differences

These data indicate the following:

1. The "successful" group scored higher on the initial and final achievement tests.
2. The intelligence of the "successful" group was significantly higher than the intelligence of the "unsuccessful" group.
3. The grade completed by the "successful" group, was significantly higher than the grade completed by the "unsuccessful" group.
4. The other paried variables of prior schooling, activities in prison showed statistically insignificant differences.

Conclusions.--The analysis and interpretation of the findings of this study warrant that certain conclusions be drawn. The conclusions so warranted are:

1. Prisoners with poor educational background were below test norms in intelligence.
2. Being reared in a slum area was not a factor in the lives of these criminals.
3. Juvenile records of crime was not a factor in the development of these criminals.
4. Most crowded and least crowded areas appeared to produce most of these criminals.
5. Broken homes appeared to be a factor in the production of criminals.
6. Marital status of being married or being single appeared to contribute to the production of these prisoners.
7. Lack of occupational training appear to contribute to the production of these criminals.
8. Illegal drugs and liquor were the major crimes for this group.
9. The successful groups' achievement was reliably higher than the unsuccessful group.

10. The successful group possessed an intellectual capacity that was significantly higher than the unsuccessful group.
11. The prior education of the successful group was statistically higher than the prior education of the unsuccessful group.
12. The difference in school ages and prison activities was not reliable.

Implications.---The findings and conclusions of this study warrant that certain implications be drawn. The implications so warranted are:

1. It appears that intelligence is a factor of achievement for this group.
2. Becoming criminals does not necessarily start in youth.
3. Slum areas do not necessarily produce the larger number of prisoners.
4. Broken homes appeared to be a contributing factor in the production of criminals.
5. Certain marital relations and being single appeared to be a factor in the production of criminals.
6. Prior educational experience appear to be a factor in the success of achievement in prison school.
7. However, it appears that being successful or unsuccessful in prison school does not affect the conduct of prisoners.

Recommendations.---The interpretation of the conclusions and implications pertinent to the findings of this study would appear to justify the recommendations to follow.

1. It is recommended that the authorities of the Atlanta Federal Prison continue to place increased emphasis on the program of education for the prisoners incarcerated within this prison; and pursue the overall objective:

To bring the inmate to adopt goals and attitudes which are in accord with those of society and which will further the improvement of society or the social order to which he is to return.

2. It is recommended that the Director of the Program of Education at the Atlanta Federal Prison will seriously explore the feasibility and practicality of providing a two-fold type of educational program, to wit:
 - a) The current program which permits the prisoner to continue in the educational program so long as he can profit therefrom.
 - b) Modified program, with an adult education emphasis, for those prisoners who are presently released from the regular program because of their inability to find desirable adjustment to the program.
3. It is recommended that further study be made of the problems of training and redirection of the attitudes and behavior-patterns of prisoners incarcerated within the Atlanta Federal Prison, Atlanta, Georgia.

BIBLIOGRAPHY

Books

- Barnes, Harry E. The The Story of Punishment. Boston: The Stratford Company, 1950
- Barnes, Harry, and Teeters, Negley K. New Horison in Criminology. New York: McGraw Hill Book Company, 1950.
- Bayley, Nancy. "Mental and Emotional Growth and Personality Adjustment." Mental Hygiene and Modern Education. New York: Farrar and Rinehart, Incorporated, 1939.
- Bennett, James V. "Evaluating a Prison." The Annals of the American Academy of Political and Social Science.
- Chassell, Hollis. Education in the Elementary School. New York: American Book Company, 1942.
- Chassell, Clara. The Relationship Between Morality and Intellect. New York: Teachers College, Columbia University, 1938.
- Clark, Willis. Manual of Directions., 1950
- Elliott and Merrill. School Disorganization. New York and London: Harper and Brothers Publishers, 1934.
- Hunt, J. Personality and the Behavior Disorders. New York: The Ronald Press Company, 1940.
- Harnes, E. Handbook of Child Guidance. New York: Childcore Publication, 1947.
- Mac Cormic, A. The Education of Adult Prisoners. New York: The National Society of Penal Information, Incorporated, 1931.
- Richards, E. L. Introduction to Psychobiology and Psychiatry. St. Louis: the C. V. Mosley Company, 1946.
- Sheldon and Glueck. Preventing Crime. New York: McGraw-Hill Book Company, Incorporated, 1936.
- Sherman, M. E. Mental Hygiene and Education. New York: Longmans, Green and Company, 1939.

Smith, William. Ancient Education. New York: Psychological Library, 1936.

Sutherland, Principles of Criminology. Chicago: J. P. Lippencott Company, 1934.

Webster, Hutton. History of Mankind. Boston: D. C. Heath and Company, 1923.

Proceedings

The American Correction Association, Proceedings of the Eighty-Sixth Annual Congress of Correction (Los Angeles, Calif.: 1956).

Unpublished Material

Neal, Luther Randall. "A Study of the Mental Maturity, Educational Achievement, Personality Adjustment, and Religious Affiliation of the Prisoners at the Elbert County Prison, Elberton, Georgia, 1956-1957." Unpublished Masther's thesis, School of Education, Atlanta University, 1957.

Article

Arthur, Grace. "A Study of Achievement of Sixty Grade One Repeaters As Compared with that of Non-Repeaters of the Same Age." Journal of Experimental Education (December, 1936), 203-205.

APPENDIX

INSTITUTION U.S. Penitentiary Hospital
Atlanta 15, Georgia

DATE _____

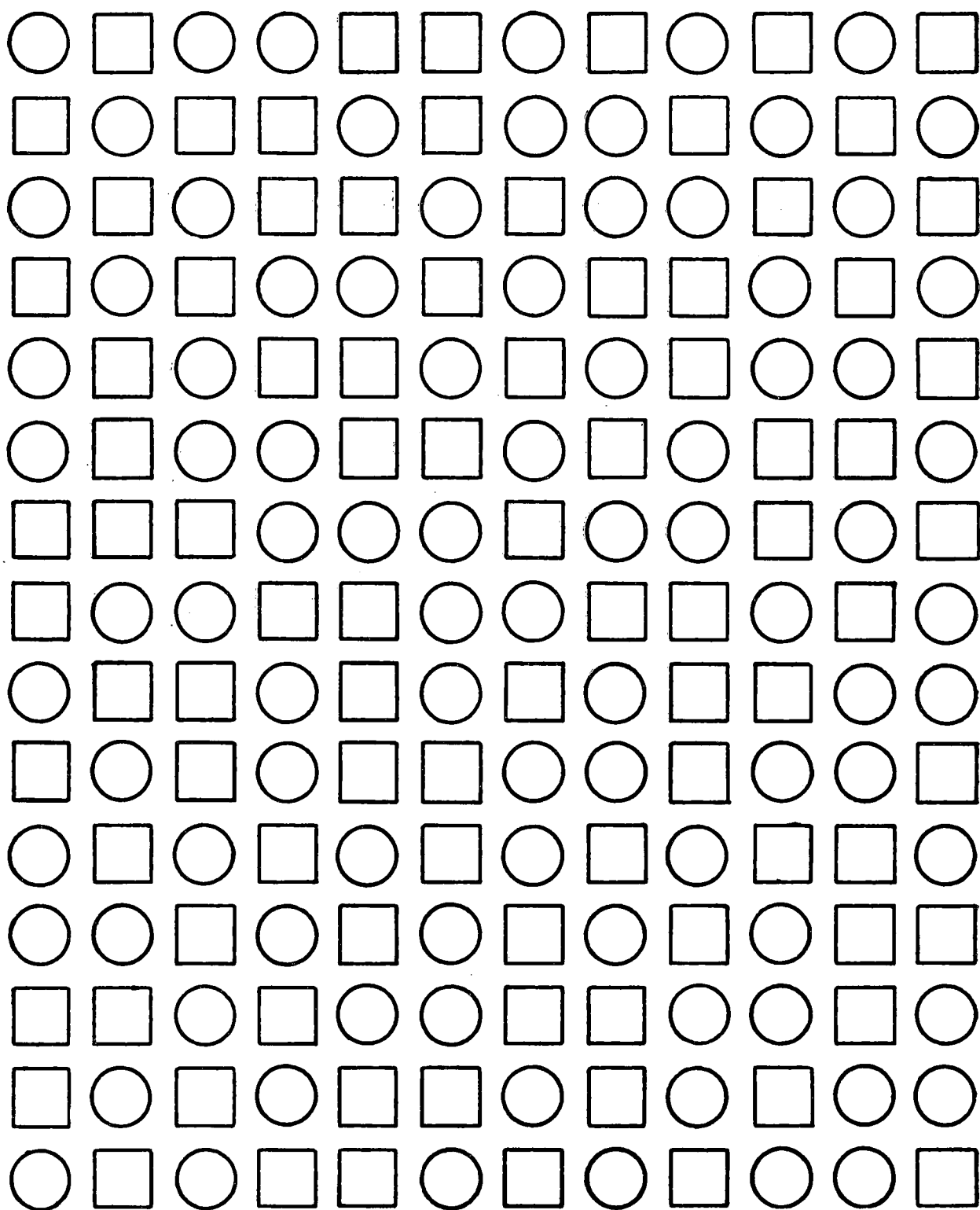
U. S. PUBLIC HEALTH SERVICE
FEDERAL PENAL AND CORRECTIONAL INSTITUTIONS
CLASSIFICATION TEST

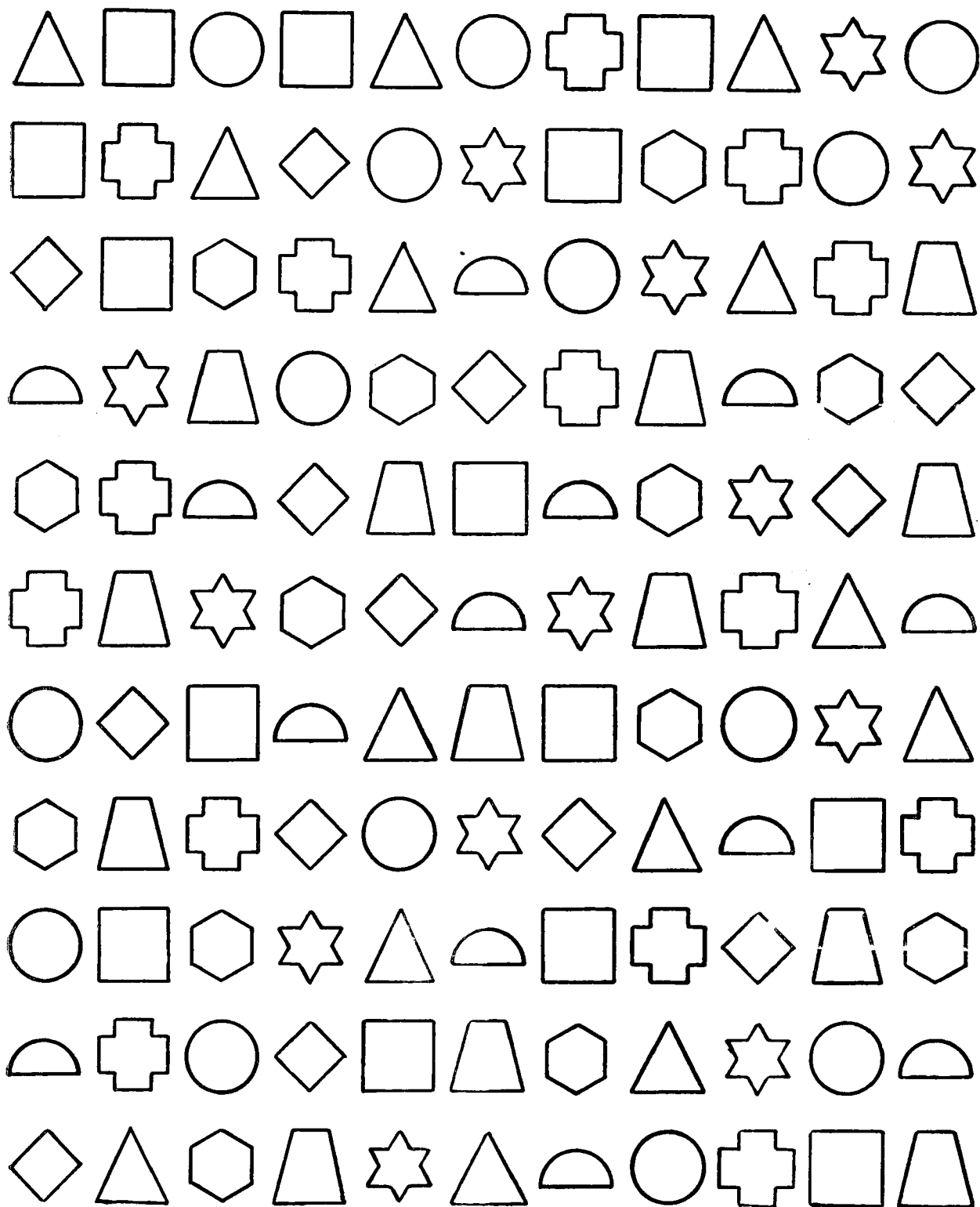
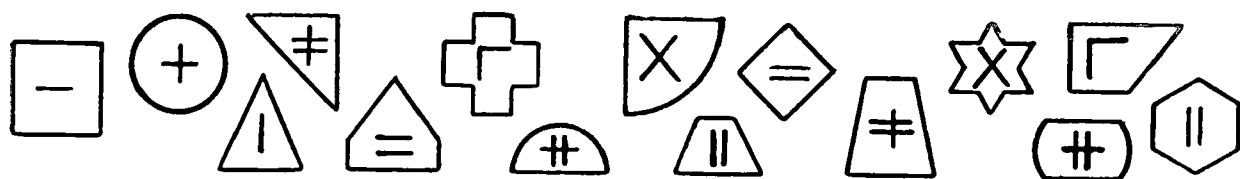
NAME _____

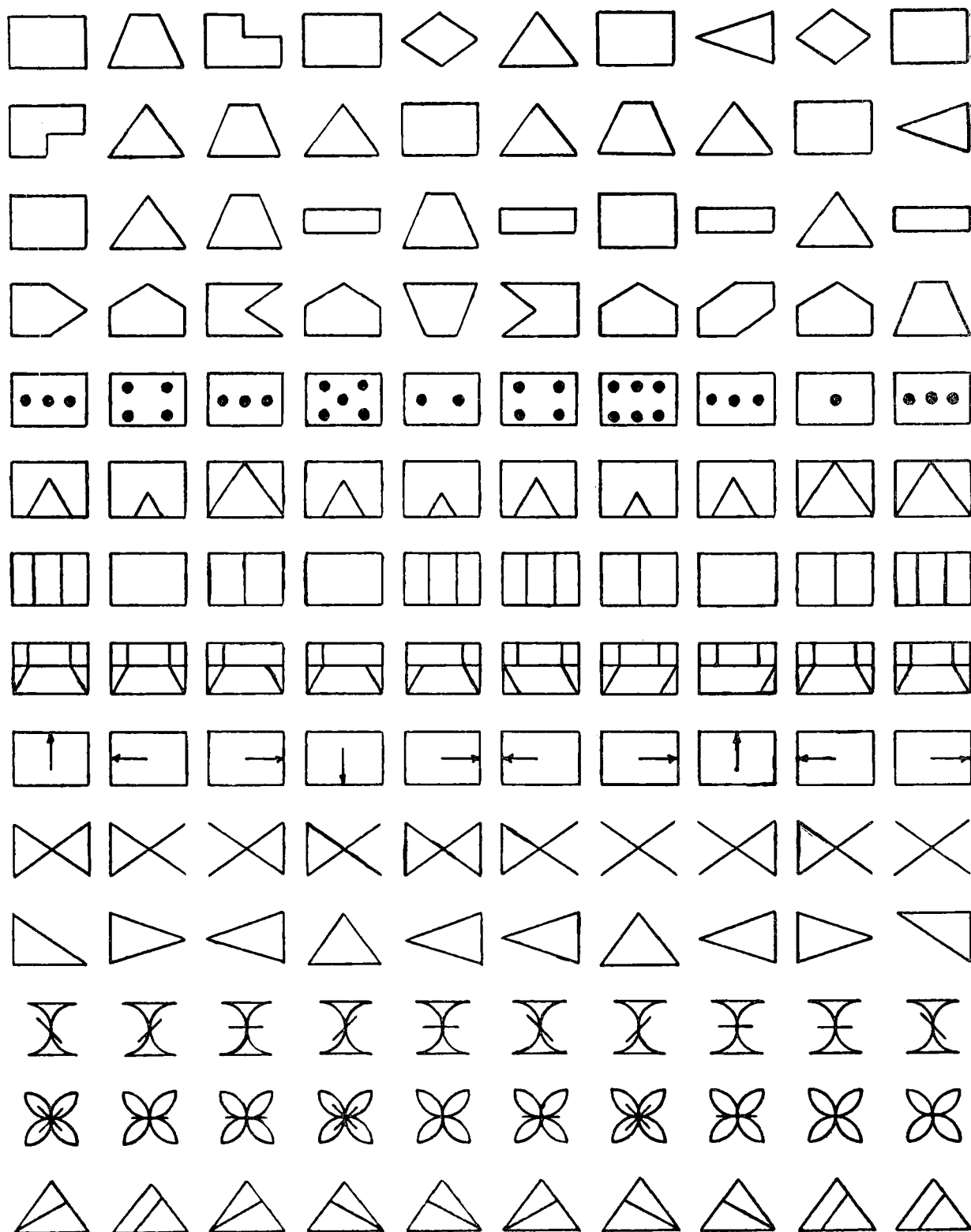
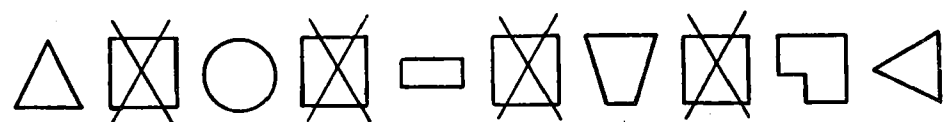
REGISTER NUMBER _____ DATE OF BIRTH _____

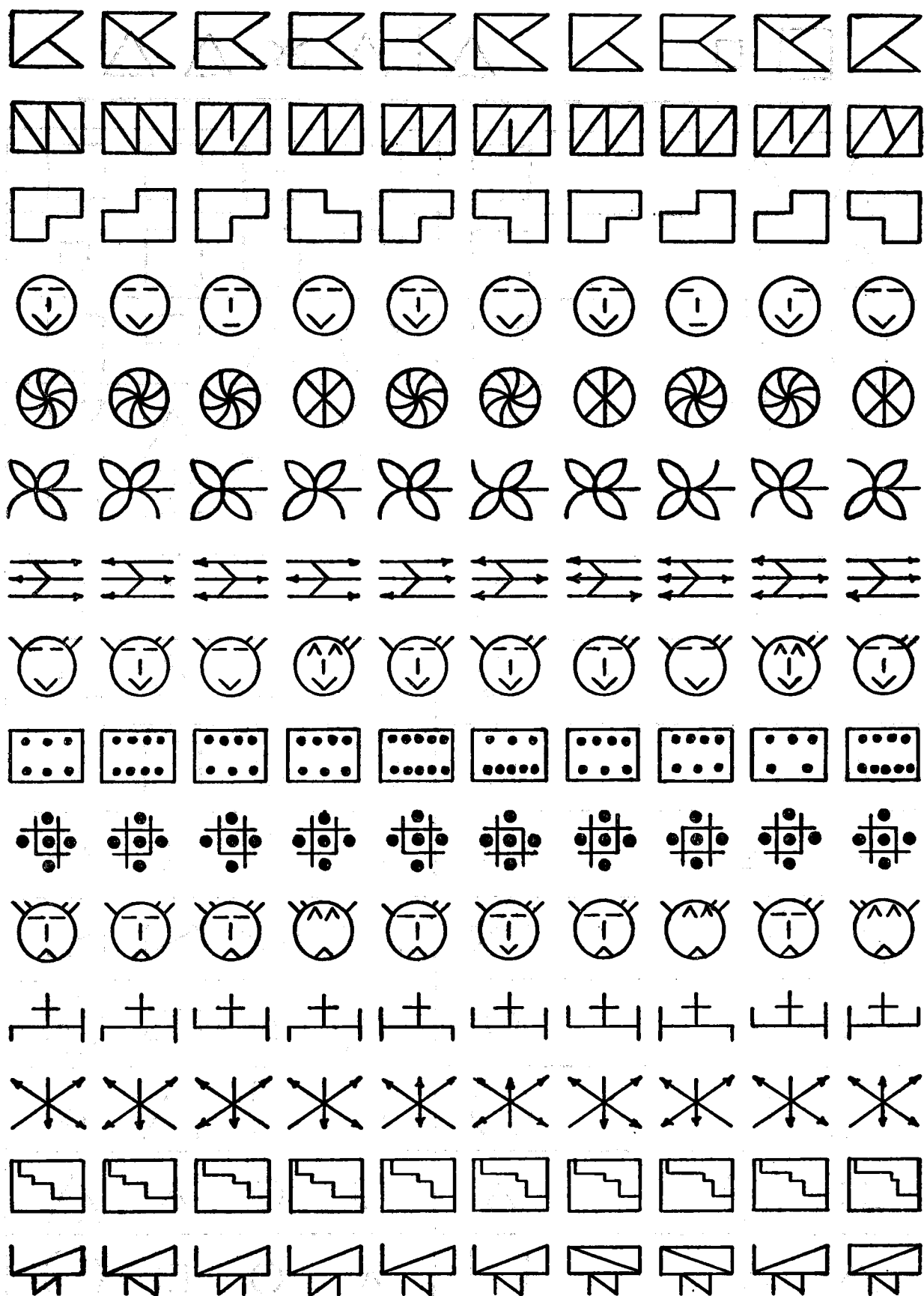


\oplus \ominus \oplus \ominus



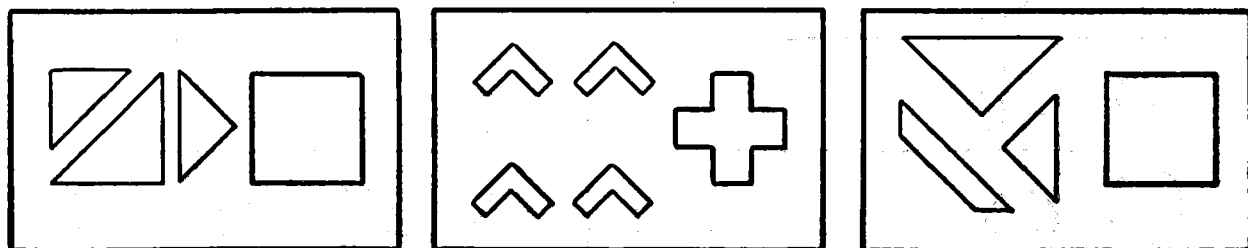
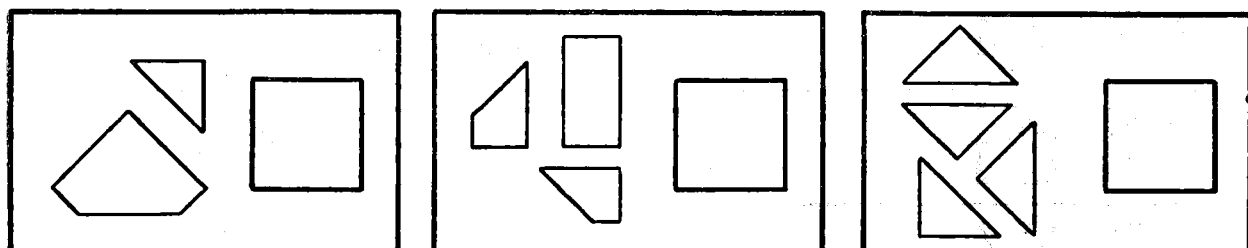
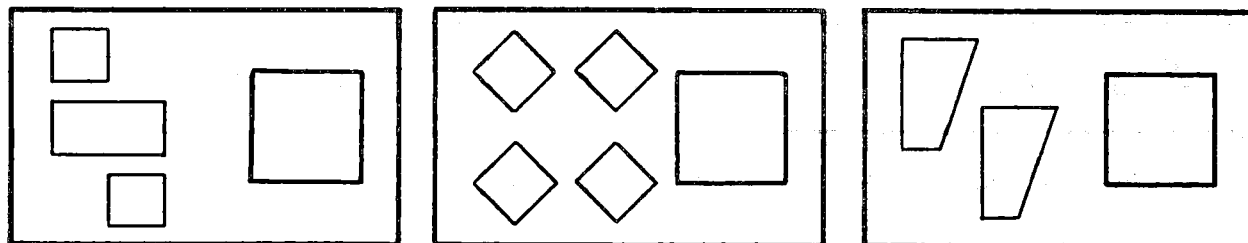
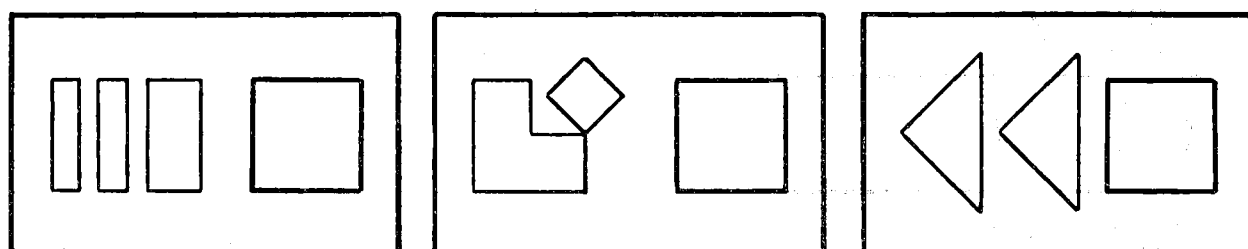
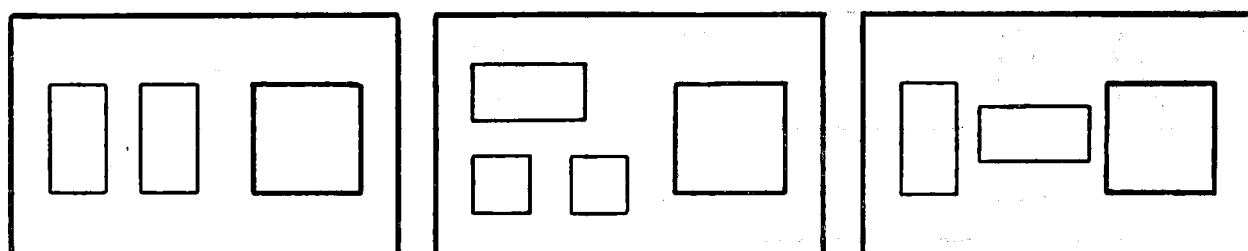
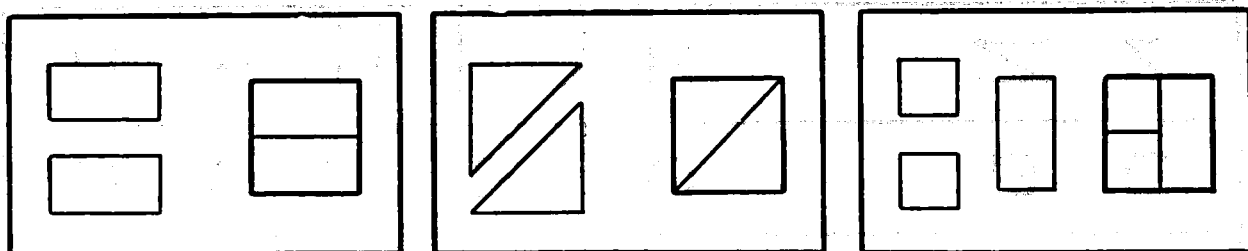


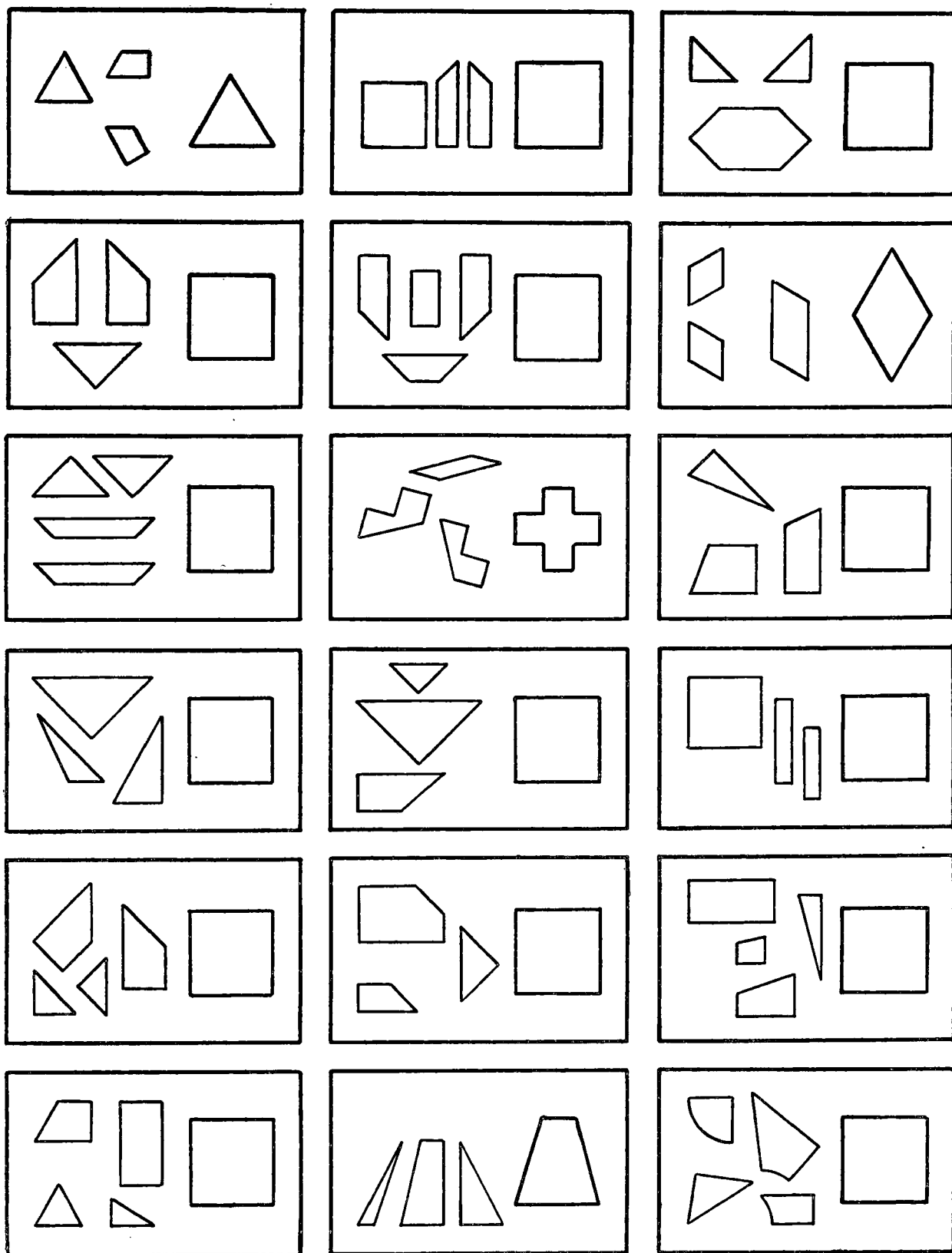


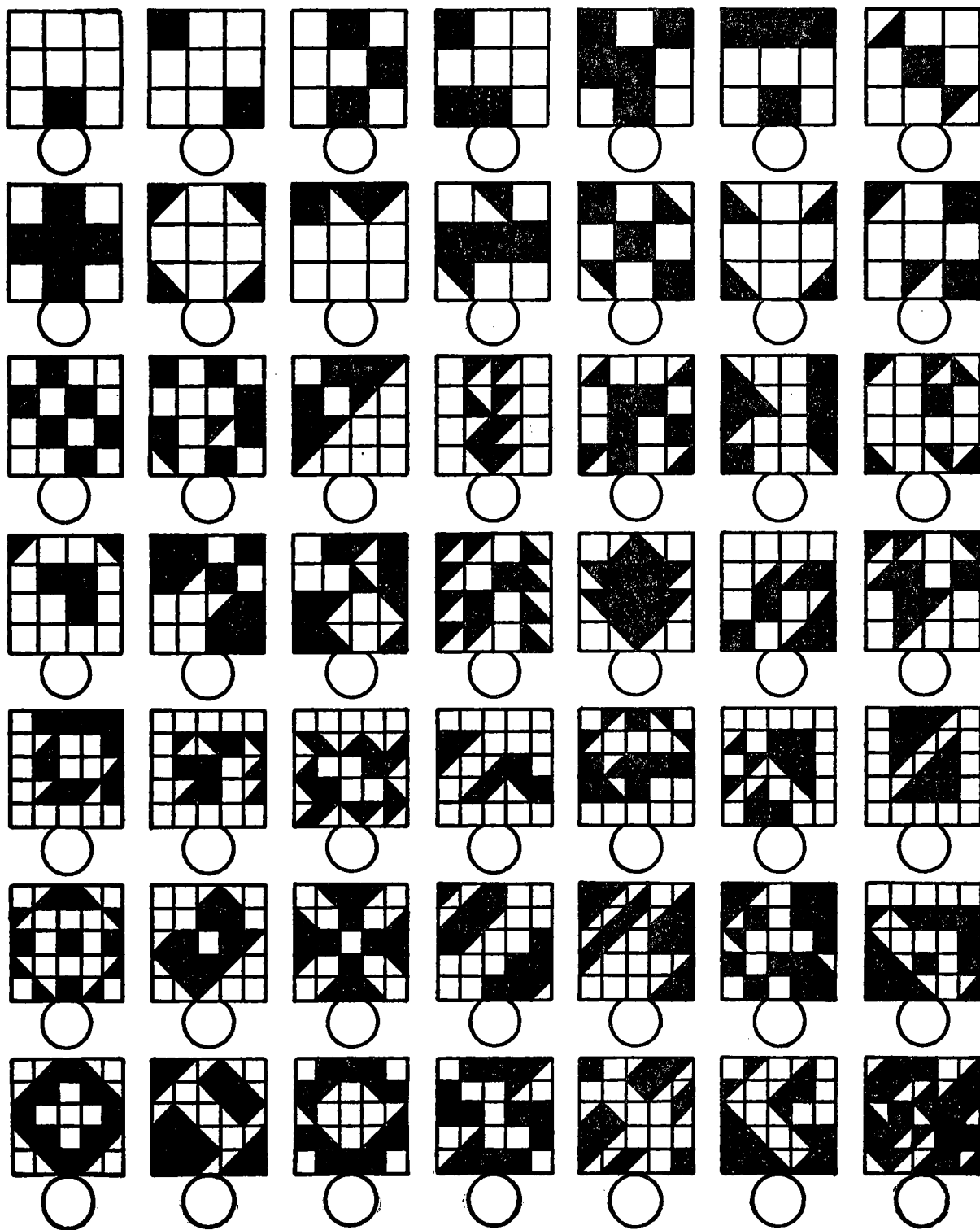
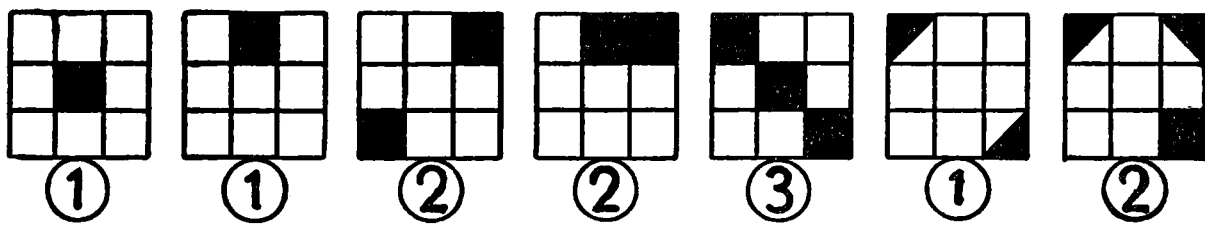




△ △	□	□ □ □ □
△ △	□	□ □ □ □
○ ◐	□	○ △ ◻ □
▽ ▽	○	○ □ △ ▽
▽ ▽	○	△ ○ □ ⊕
○ ○	△	⊥ △ ⊥ □
⊥ ⊥	⊥	◻ □ ⊙ ⊥
△ △	□	○ ○ □ ▽
Σ Σ	⊥	⊥ ▮ ⊥ ⊥
∧ ∨	⊗	⊥ ⊗ ▽ ▽
□ □	○	△ △ ◻ ○
□ ▽	○	◊ ◻ △ △
○ ○	△	□ ○ △ △
△ △	□	△ ○ □ ○







FPI-LK-3-11-58-750-5371

STANFORD ACHIEVEMENT TEST

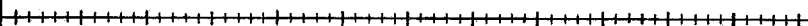
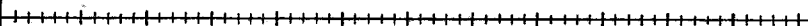
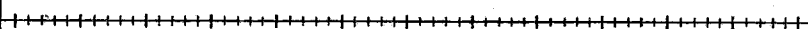
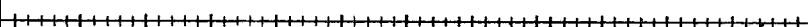
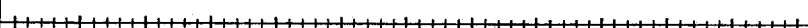
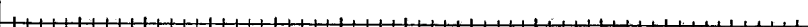
TRUMAN L. KELLEY • RICHARD MADDEN • ERIC F. GARDNER • LEWIS M. Terman • GILES M. RUCH

Name _____ Age _____ Grade _____ Boy or girl _____

Teacher _____ School _____ Date of birth _____
Year Month Day

City or Town _____ State _____ Date _____

	1 PAR. MEAN.	2 WORD MEAN.	AVER. READ.	3 SPELL.	4 ARITH. REAS.	5 ARITH. COMP.	AVER. ARITH.	BATTERY MEDIAN
Grade Equiv.								
Age Equiv.								
%ile Rank								

Individual Profile Chart																
		GRADE SCORE SCALE														
		10	15	20	25	30	35	40	45	50	55	60	65	70		
1	Par. Mean.													1	Par. Mean.	
2	Word Mean.													2	Word Mean.	
3	Spell.													3	Spell.	
4	Arith. Reas.													4	Arith. Reas.	
5	Arith. Comp.													5	Arith. Comp.	
	Batt. Mdn.														Batt. Mdn.	
		1.0	1.5	2.0	2.5	3.0	3.5	4.0	4.5	5.0	5.5	6.0	6.5	7.0		
		GRADE EQUIVALENT SCALE														

Issued 1953 by World Book Company, Yonkers-on-Hudson, New York, and Chicago, Illinois
Copyright 1952 by World Book Company. Copyright in Great Britain. All rights reserved. PRINTED IN U.S.A. SAT: PRIM. : J-1

This test is copyrighted. The reproduction of any part of it by mimeograph, hectograph, or in any other way, whether the reproductions are sold or are furnished free for use, is a violation of the copyright law.

TEST 1 *Paragraph Meaning*

DIRECTIONS: Find the one word that belongs in each space, and draw a line under the word. Do *not* write in the spaces.

SAMPLES:

Baby pets me.

I drink milk.

I say "Mew, mew."

I am a 51.

51. cow kitten pony child

Tom had two apples. Fred had four cookies. Fred said to Tom, "I will give you two 52 if you will give me one of your 53."

52. oranges cookies cakes bananas

53. apples oranges bananas cakes

Jane has a pet.

He wags his tail.

He says "Bow-wow."

He is a 1.

1. cat dog doll rabbit

Mary and John live in a big 2.

2. tree house farm yard

I am little.

I have hands.

I cry sometimes.

I am a 3.

3. clown calf baby squirrel

I can hear a 4.

4. star table house bell

See them laugh.

Something is 5.

5. funny red big out

Grandma came to see Alice and Tom. She brought a doll and a knife. The knife was for Tom.

The doll was for 6.

6. me us Alice brother

I live in trees.

I have feathers.

I lay eggs.

I am a 7.

7. squirrel bird duck hen

I am blue.

I am far away.

You cannot touch me.

I am the 8.

8. table chair garden sky

Frank wanted to go out to play, but his mother said it was too wet outdoors. Frank looked out the window and saw that his mother was right; the 9 was falling fast.

9. night storm rain cold

The little boy can throw a ball, but he cannot 10 it.

10. make catch swing eat

We have a small pony.

We always try not to 11 it.

11. ride see hurt feed

Father took us on a trip through the mountains. Father drove slowly.

He said, "It is not safe to drive 12 on mountain roads."

12. fast far much alone

TEST 1 *Paragraph Meaning* (Continued)

Sally cried because she thought she had lost her doll. But her tears turned to smiles when she saw good old Sport coming through the gate with the 13 in his mouth.

13. ball bone stick doll

Mrs. White was ironing when the telephone rang. She put down the electric iron and went to answer the call. She forgot to turn off the electricity and the iron got so 14 that it 15 a hole in the ironing-board cloth.

14. heavy hot sharp bad
15. left wore burned tore

Helen was sick. The girls at school wrote her a letter. "Dear Helen," they said, "We hope you will soon feel 16 enough to come back to 17."

16. well happy nice glad
17. church visit school town

You take some of these blocks. I will build a house with a yard. You build a fence around the 18.

18. yard farm barn walk

Clowns are funny people in the circus. They paint their faces and they wear queer clothes. The children laugh with joy when the 19 do their 20 tricks.

19. animals boys women clowns
20. funny old new best

Bo-Peep lost her sheep.

She could not find them anywhere.

At last she went 21 and there were the sheep.

They had come back by themselves.

21. away farther home along

A fox fell into a well and was trying with all his might to save himself from being drowned. A wolf looked down at him and said, "I am so sorry for you. How did this happen?" "Being sorry does not do me any good," replied the 22. "If you really want to save me from 23, help me get out of here."

22. fox sheep wolf man
23. worry drowning falling trouble

The children went to the circus.

They saw elephants and monkeys and many other animals.

There were many clowns and lots of popcorn and peanuts. The children said that they wished a 24 would come every day.

24. parade clown circus monkey

You can often find shells along the edges of rivers and lakes.

An even better place to pick up 25 is by the ocean.

25. seaweed rocks shells sand

Many Indians now live on land set aside for them by our government because when the white men came they took the 26 away from the 27.

26. farms land cities houses
27. people farmers Negroes Indians

Go on to the next page.

TEST 1 *Paragraph Meaning* (Continued)

Once there was a boy who liked to earn money. He lived in a house with a garden in which he raised carrots. Every day he took some of his 28 to the market to 29.

28. money flowers carrots toys

29. spend sell show play

Dick and Ann had for a pet a white mouse called Mickey. The children were fond of Mickey and took him on their vacation trips. They both took care of him. It was Dick's job to keep the cage nice and clean, and it was 30 duty to see that the 31 got plenty of the right kind of food.

30. his their Mickey's Ann's

31. mouse children mice kitten

We went up in an airplane. At first we flew near the 32 where we could see people and animals. Later we could not see them. Our plane was flying too 33.

32. houses ground town hills

33. high low far fast

A long time ago farmers used sharp sticks instead of plows to dig up the earth. Now they have steel 34 pulled by horses or tractors. They can cultivate large fields and raise big 35.

34. tools plows machines forks

35. tomatoes corn plants crops

In the back of most books is an index that tells you on what page to look for any subject written about in the book. Paul wanted to know about bears. He looked in a book about animals and found the right 36 by looking in the 37 under "B."

36. idea spot letter page

37. index front book printing

On Saturday Mother gets groceries. She buys 38 from the butcher. She buys vegetables at the market and 39 and cookies at the bakery. She buys enough 40 of all kinds to last until Monday.

38. bananas meat potatoes candy

39. oatmeal fruit bread candy

40. food packages meat dessert

The shaking of hands with the right hand started in the days when everybody carried a sword or a knife. In those days when one met a stranger he would hold out his 41 hand to show that he was friendly and didn't have a 42 or a 43 ready for attack.

41. free right left nearest

42. sword spear weapon stick

43. fist gun knife club

The gold used for jewelry is mixed with some other metal, usually copper. Pure gold is very soft and jewelry made of it would not wear well. Therefore copper or some other 44 is mixed with the gold to make it 45.

44. mineral metal material chemical

45. brighter prettier softer harder

Insects that fly at night often make mistakes. They cannot tell the light of the moon from that given by an open fire. Sometimes these 46 fly into a 47 and are killed.

46. bees birds moths insects

47. flame house window car

I go to bed at seven o'clock. Bob stays up until eight. We both rise at seven o'clock in the morning.

Bob sleeps an hour 48 than I do.

48. longer more later less

Stop.

NO. RIGHT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Gr. score	12	13	13	14	15	16	17	18	18	19	20	20	21	22	23	23	24	24	25	25	26	27	27	28	29	30	30	31	32	32	33	34	34	35	36	36	37	39	40	42	44	46	50	55	61	68	77	

TEST 2 *Word Meaning*

DIRECTIONS: Draw a line under the one word that makes the sentence true, as shown in the first sample. Look at all four words and choose the best one.

SAMPLES:

A cat can

paint bark read jump

The name of a color is

farm milk red pet

- 1 A bird can
study write bark fly
- 2 We get eggs from
cattle hens horses pigs
- 3 A bed is a place to
sleep read sit stand
- 4 A toy is used for
riding pushing playing working
- 5 A fish can
talk sing swim fly
- 6 We laugh when we are
mean happy warm pretty
- 7 A young hen is a
rooster duck kitten chicken
- 8 Ice is made from
plants water salt glass
- 9 A room is part of
a yard an auto a sled a building
- 10 A mother must always take care of her
children cooking sweeping husband
- 11 The floor of a room is at the
side back bottom top
- 12 On holidays most children
study travel work play
- 13 If Mary is with Jane, they are
tired talking scared together
- 14 A path is a place to
drive walk rule remain
- 15 To earn money is to
spend it win it work for it lose it
- 16 We find water in
rocks lakes bushes boxes
- 17 March is the name of a
day week month year

- 18 A bowl is
soup cereal a dish a lunch
- 19 A ship is a kind of
field bird box boat
- 20 Above means
over under clear many
- 21 A grape is a
rose business fruit drink
- 22 An onion is a
vegetable bean berry weed
- 23 A sawmill makes
wire boots needles lumber
- 24 A pair means
many one two three
- 25 A village is a
state farm college town
- 26 To save is to
work keep find get
- 27 To arise is to
get up rest shine awake
- 28 Mary Smith and John Doe are cousins if
they have the same
grandmother mother sister daughter
- 29 Queer means
strange bright old pleasant
- 30 A feast is a
plate meal crown dance
- 31 Around means
next under alone about
- 32 To receive a letter means to
mail it get it write it see it
- 33 Marvelous means
pleasant distant wonderful great
- 34 A customer is one who
plants works buys learns
- 35 When you connect two railroad cars, you
push them join them lift them run them
- 36 To be content is to be
faithful satisfied free fair
- 37 To learn is the same as to
try teach find out look for
- 38 To lash is to
whip deceive destroy waste

NO. RIGHT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
Gr. score	13	13	14	15	16	16	17	17	18	19	20	21	21	22	23	24	25	26	27	28	29	29	30	31	32	33	34	35	36	37	39	41	43	45	49	53	58	


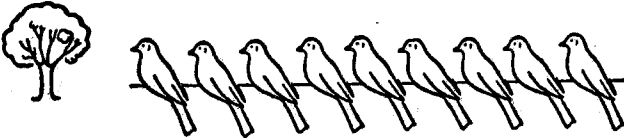
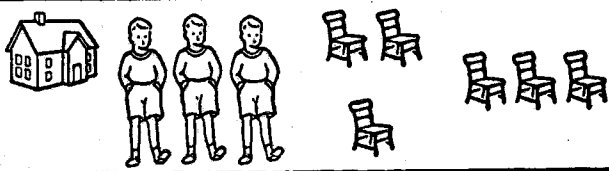


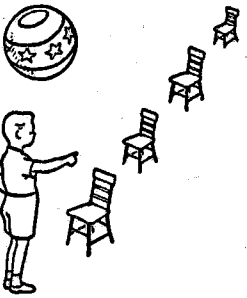
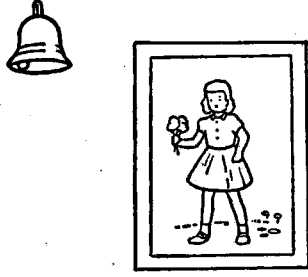
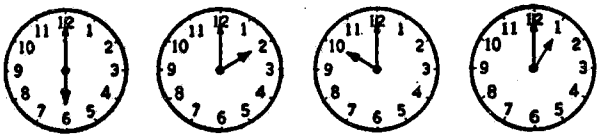




Stop.

TEST 3 *Spelling*

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____
21. _____
22. _____
23. _____
24. _____
25. _____
26. _____
27. _____
28. _____
29. _____
30. _____

No. RIGHT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Gr. score	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	35	37	39	42	44	47	

TEST 4 Arithmetic Reasoning

							
							
							
	 4 7 6 5						
							
							
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 25%;">1955</td> <td style="width: 50%; text-align: center;">MAY</td> <td style="width: 25%;">1955</td> </tr> <tr> <td style="text-align: center;">Sun.</td> <td style="text-align: center;">Thurs.</td> <td style="text-align: center;">Sat.</td> </tr> </table>		1955	MAY	1955	Sun.	Thurs.	Sat.
1955	MAY	1955					
Sun.	Thurs.	Sat.					
	 = + × ÷						
 81 63 78 67	 2 5 9 15						

14 How many cars are 2 cars and 3 cars?

15 There were 3 boys and 4 girls playing in the sand. How many boys and girls were playing all together?

16 Jane had 3 dolls, Ellen had 4, and Sue had 1. How many dolls did all of them have?

17 There were 9 children playing. Then 3 went home. How many were left?

18 There are 8 apples on the table. If we eat 5 of them, how many will be left?

19 We counted 11 carrots in one row of the garden, 6 carrots in another, and 15 carrots in another. How many carrots are there in the 3 rows?

20 Hazel made 12 cakes for the party. Ruth made 7 and Joan made 24. How many cakes did they all make?

21 Three dimes and two nickels are how many cents?

22 Judy has 16 jacks and Hazel has 9. How many more jacks has Judy than Hazel?

23 Dick earned 7 dollars. His work is one third done. How many dollars are 3 times 7 dollars?

24 Helen bought a book for 38 cents. She gave the clerk 50 cents. How many cents change should she have received?

25 Bob's mother had 7 quarts of ice cream. The boys ate a gallon. How many quarts were left?

Stop.

No. right	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Gr. score below 10	10	11	12	13	15	16	18	19	21	23	25	27	29	31	32	34	36	38	40	43	46	49				

TEST 5 Arithmetic Computation

DIRECTIONS: Get the answers to these examples as quickly as you can without making mistakes. Look carefully at each example to see what you are to do.

Addition:

$$\begin{array}{r} 2 \\ +1 \\ \hline 3 \end{array}$$

$$\begin{array}{r} 3 \\ +3 \\ \hline \end{array}$$

$$\begin{array}{r} 1 \\ +5 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ +3 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ +2 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ +2 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ +3 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \\ +7 \\ \hline \end{array}$$

$$\begin{array}{r} 4 \\ +6 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ +4 \\ \hline \end{array}$$

$$\begin{array}{r} 31 \\ +28 \\ \hline \end{array}$$

$$\begin{array}{r} 60 \\ +29 \\ \hline \end{array}$$

Subtraction:

$$\begin{array}{r} 4 \\ -2 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 2 \\ -1 \\ \hline \end{array}$$

$$\begin{array}{r} 5 \\ -3 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ -5 \\ \hline \end{array}$$

$$\begin{array}{r} 8 \\ -1 \\ \hline \end{array}$$

$$\begin{array}{r} 6 \\ -3 \\ \hline \end{array}$$

$$\begin{array}{r} 7 \\ -4 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ -2 \\ \hline \end{array}$$

$$\begin{array}{r} 10 \\ -4 \\ \hline \end{array}$$

$$\begin{array}{r} 9 \\ -6 \\ \hline \end{array}$$

$$\begin{array}{r} 38 \\ -24 \\ \hline \end{array}$$

$$\begin{array}{r} 87 \\ -30 \\ \hline \end{array}$$

Add $\begin{array}{r} 3 \\ 5 \\ 1 \\ \hline \end{array}$	$8 + 4 =$	Add $\begin{array}{r} 25 \\ +84 \\ \hline \end{array}$	Add $\begin{array}{r} 23 \\ +6 \\ \hline \end{array}$	$\begin{array}{r} 89 \\ -25 \\ \hline \end{array}$	$\begin{array}{r} 27 \\ -2 \\ \hline \end{array}$
$\begin{array}{r} 49 \\ -47 \\ \hline \end{array}$	Add $\begin{array}{r} 7 \\ 5 \\ 0 \\ 9 \\ \hline \end{array}$	$17 - 9 =$	Multiply $\begin{array}{r} 6 \\ \times 2 \\ \hline \end{array}$	Add $\begin{array}{r} 173 \\ +560 \\ \hline \end{array}$	$2 \times 5 =$
Multiply $\begin{array}{r} 14 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 92 \\ -69 \\ \hline \end{array}$	$\begin{array}{r} 126 \\ -52 \\ \hline \end{array}$	Add $\begin{array}{r} 387 \\ 25 \\ 924 \\ \hline \end{array}$	Multiply $\begin{array}{r} 230 \\ \times 2 \\ \hline \end{array}$	$\begin{array}{r} 427 \\ -183 \\ \hline \end{array}$
$\frac{1}{2}$ of 8 =	Divide $2 \overline{)14}$	$\begin{array}{r} 725 \\ -487 \\ \hline \end{array}$	Add $\begin{array}{r} \$ 7.68 \\ +4.90 \\ \hline \$ \end{array}$	Divide $3 \overline{)156}$	$\begin{array}{r} 422 \\ -385 \\ \hline \end{array}$

Stop.

NO. RIGHT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
Gr. score	12	13	14	14	15	15	16	17	18	18	19	19	20	20	21	21	22	23	23	24	24	25	26	26	27	27	28	28	29	29	30	31	32	33	33	34	35	35	36	37	38	38	39	41	44	45

TRUMAN L. KELLEY • RICHARD MADDEN • ERIC F. GARDNER • LEWIS M. TERMAN • GILES M. RUCH

City or town_____ State_____ Date_____

a

TEST 1 *Paragraph Meaning*

DIRECTIONS: Find the word that belongs in each space, and draw a line under it. Do not write in the spaces.

SAMPLE:

Wheat grows on farms. Most bread is made from wheat. If farmers did not plant 51, most people would have no 52 to eat.

51. corn potatoes rice wheat

52. oranges bread carrots eggs

The little baby likes to 1.

1. play read talk sing

There is one cloud in the 2 sky.

2. white black blue yellow

I am yellow.

I am good to eat.

You put me on bread.

I am 3.

3. milk butter dinner lunch

I wanted to cross the street.

I saw a car coming.

I waited until the 4 went by.

Then it was safe to 5.

4. car people time piece

5. look cross skip play

Who wants to help the 6 plant a tree?

6. kitten teacher dog horse

Mother said, "Fruit is good for children." She gave us an apple and an orange. Ruth ate the orange and I ate the 7. Mother said, "You both like 8, don't you?"

7. peach fruit apple seeds

8. apples oranges fruit candy

One day when Jane went to town with her mother she got lost. She saw a policeman on the street corner. She said, "Will you help me find my 9?" He said, "Yes." A 10 will always 11 you if you ask him.

9. mother father purse doll

10. person stranger policeman man

11. help answer find tell

The postman brings Helen's mail. Mary wrote a letter to Helen and mailed it. The next day 12 saw the postman coming to her house with a 13 in his hand.

12. he they Mary Helen

13. paper package letter toy

Sam hid his fish-pole in the bushes behind his house. His shoes, stockings, and trousers were all wet. He went in and 14 quickly, hoping that his mother wouldn't find out that he had gone 15.

14. ate changed lay down played

15. away fishing somewhere to play

In Holland, instead of seeing boats on the canals in winter, you see hundreds of persons skating on the ice. Children 16 to school because it is so much more fun to skim swiftly over the frozen canals than to 17 slowly along the paths and roads.

16. go run skate sail

17. walk ride play hop

The Smith family has three children: Jane, Ellen, and Jim. Each child has a job to do every morning. Jane sets the table. Jim sweeps the walk. 18 dries the dishes. The 19 of the family work indoors and the boy works 20.

18. Jane Ellen Jim Mother

19. girls boys parents children

20. hardest most indoors outdoors

TEST 1 *Paragraph Meaning* (Continued)

Long ago a king named Bruce had been defeated six times by another king who wanted to take Bruce's country away from him. One day as Bruce lay resting and thinking, he saw a spider trying to weave her web. Six times she tried to throw the thread from one beam to another and six times she failed, but the 21 did not lose hope. She 22 again and this time she succeeded. "I too will try a seventh time," said 23. This time he defeated the other king.

21. animal spider man king
 22. tried jumped spun swung
 23. the spider he she Bruce

An apiary is a place where bees are kept, and an aviary is a place where birds are kept. Dick loves birds. Someday he hopes to have his own 24. Ned keeps bees in his 25 and sells the honey made by his 26.

24. hive home aviary apiary
 25. garage bedroom aviary apiary
 26. bees birds pets flowers

Indians who live on government reservations are in certain respects taken care of by our government. Criminals in prisons are also taken care of by 27, but they do not have the freedom to do what they like and to come and go as they please which the Indians 28 do have.

27. the government the police
 their families private schools
 28. in the army on reservations
 in the navy in prison

Tom's birthday comes in May. John's birthday comes in March. They were born in the same year. 29 is a little older than 30.

29. Mother Father Tom John
 30. Mother Father Tom John

According to an old story, or myth, a salamander, which is a little animal somewhat like a lizard, could live in the fire. Because of this myth the name 31 has been given to various cooking dishes, pokers, and so forth which may be put in the fire and not 32.

31. fireproof heat resistant salamander durable
 32. smoke cook boil away burn up

The green substance in leaves, called chlorophyll, manufactures food out of elements taken from water and air. Each leaf is a kind of machine run by the power of sunlight. Whenever the sun shines on a 33, the 34 begins making carbohydrates, a 35 which can be used in other parts of the plant.

33. leaf tree garden field
 34. food chlorophyll factory water
 35. wood leaf food chlorophyll

The buds on trees are covered with scales like tiny leaves. As each bud grows, it pushes the scales apart. In a few trees like the willow each 36 is wrapped in a single 37. The growing bud has to push hard enough to 38 the wrapping.

36. leaf bud stem blossom
 37. coat skin scale leaf
 38. lift unwind bend break

There are many breeds of dogs, some of them useful to man, others valuable simply as pets. Whippets can run very fast, collies can be trained to herd sheep, setters can learn to scent game, and terriers are fun to play with. Of these breeds, Don, who likes to hunt, would probably choose a 39. Bud simply wants a dog that will run after a ball thrown for him. He would like a 40. Don wants a racing dog; so his choice would probably be a 41.

39. whippet collie setter terrier
 40. whippet collie setter terrier
 41. whippet collie setter terrier

TEST 1 *Paragraph Meaning* (Continued)

In colonial days, and for some time after, the duel played a considerable part in American political and social life. If a man was insulted, he felt that he had to fight. The most famous of all American 42 was the tragic meeting of Alexander Hamilton and Aaron Burr, both prominent men. Pistols were used, and 43 killed Hamilton.

42. duels battles struggles events
43. they someone Alexander Burr

By means of certain tests devised by psychologists, educators are able to classify students according to their particular aptitudes. This is a great help to the 44 themselves, who are happiest and most successful doing work suited to their abilities. The tests are also of great assistance to 45 who wish to advise and guide their students.

44. educators psychologists boys students
45. people teachers women men

Sugar comes from sugar cane and from sugar beets. The cane grows in warm climates and the beets in cooler regions. When we get sugar from Michigan or Colorado it has come from sugar 46, and when we get it from Louisiana or Hawaii it has come from sugar 47. Smithville produces much cane sugar. It has a 48 climate.

46. plants cane farms beets
47. beets plants cane farms
48. pleasant cool warm good

Long ago a sea extended over the lower part of the Mississippi Valley. Through thousands of years the river brought down earth and deposited it in the water until the 49 was filled and a great area of fertile 50 had been built up.

49. ocean river hill hole
50. land farms fields gardens

Stop.

No. RIGHT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Gr. score	below 10	10	12	14	15	16	17	18	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	46	48	50	52	55	57	60	63	67	71	76	81	86	93	99		

TEST 2 *Word Meaning*

DIRECTIONS: Draw a line under the one word that makes the sentence true, as shown in the first sample. Look at all four words and choose the best one.

SAMPLES:

The name of a color is

farm milk red pet

The day that comes after Friday is

Monday Tuesday Saturday Sunday

- 1 Mr. Smith is a
boy girl man woman
- 2 We can look out of a house by looking
through a window wall table chair
- 3 Many gardens have
flowers barns rivers woods
- 4 When it rains the ground gets
hard warm wet new
- 5 A gun goes
bang-bang fast far away
- 6 A king is always a
doctor girl man husband
- 7 If you own a toy, it belongs to
anyone everyone you a friend
- 8 A forest has many
rooms mountains houses trees
- 9 The post office sends out
telegrams mail freight broadcasts
- 10 A child who grows becomes
lazy thinner taller shorter
- 11 When we study we
think play dream wish
- 12 Silk is a kind of
paint music wood cloth
- 13 To start is to
begin run stop come
- 14 To save is to work keep find get
- 15 *Who, why, when, and where* are used when
asking questions help people money
- 16 If a thing is far away, it is in the
sunset distance fog stars
- 17 When people are together they are not
apart afraid lost sad
- 18 What is mine belongs to
me you him her
- 19 A beast is
an enemy an animal a person a bird
- 20 To complete is to
figure finish guard play
- 21 To sparkle means to
smile attempt shine command
- 22 Something is lighter than water if it
sinks swims dives floats
- 23 While goods are being carried by a train
they are called
fares freight passengers customers
- 24 Moist means
temperate damp weather cold
- 25 If a person fails, he is
dull bad unsuccessful proud
- 26 Clay is mostly
earth glass soap water
- 27 Rapid means
quick strong light short
- 28 If you have a companion with you, you are
solitary threatened pitiful accompanied
- 29 To furnish means to
finish supply teach study
- 30 The right place for a bandit is in a
university library senate prison
- 31 A big sheet of paper put up to show you
something is a
test chart check shield
- 32 When a football team stops to talk during a
game, they are in a convention
a meeting an election a huddle
- 33 A century means
long ago 10 years 25 years 100 years
- 34 To manufacture is to
make sell break invent
- 35 Any large ship is called a
transport model vessel friendship
- 36 An invention is a machine an idea
a patent a new design
- 37 A hem is most like a
hole border patch slice
- 38 If only one person can do a thing, it can be
done by
somebody nobody everybody anybody

No. RIGHT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38
Gr. score	12	13	14	15	16	17	18	19	20	22	23	24	25	26	27	28	29	30	31	32	33	35	36	38	39	40	41	42	43	44	46	49	51	54	57	61	66	71

Stop.

TEST 3 *Spelling*

1. 26.
2. 27.
3. 28.
4. 29.
5. 30.
6. 31.
7. 32.
8. 33.
9. 34.
10. 35.
11. 36.
12. 37.
13. 38.
14. 39.
15. 40.
16. 41.
17. 42.
18. 43.
19. 44.
20. 45.
21. 46.
22. 47.
23. 48.
24. 49.
25. 50.

No. RIGHT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Gr. score	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	29	30	30	31	32	32	33	34	35	35	36	36	37	38	38	39	40	41	42	44	45	46	47	49	50	53	54	56	58	60	62	64	66	

TEST 4 *Language*← 7^a← 7^b

DIRECTIONS: In each pair of words in heavy type in the letter below there is an error in either capitalization or punctuation. You are to decide which one of each pair has the correct capitalization and punctuation. Then mark the answer space at the right that has the same number as the correct form.

- SAMPLES:** This is ¹ mr. Jones. ² Mr. Jones. 1 2
- ³ St. Louis, Missouri ⁴ St. Louis Missouri 3 4
-
- 721 ¹ East ninth street ² East Ninth Street 1
- ³ Hereford, Iowa ⁴ iowa 2
- ⁵ February 22, 1954 ⁶ February 22 3
- ¹ Dear Margaret ² Dear Margaret, 4
- ³ We're going to have a club of the girls ⁴ Were 5
- in our ⁵ block, we will meet Saturday.... ⁶ block. We 6
- afternoon at two or ¹ two-thirty, ² two-thirty. 7
- First we will make doll clothes. 3 4
- Mother ³ said, "You may have....." ⁴ said 8
- some cloth out of my ⁵ bag." ⁶ bag. 9
- Did you ever make a doll's ¹ dress? ² dress. 10
- The hardest parts are the ³ neck, and.... ⁴ neck 11
- the ⁵ sleeves. ⁶ sleeves, 12
- Today is Washington's ¹ birthday, ² Birthday, and... 13
- there is no school. Yesterday we gave a play called ³ "the crossing." ⁴ "The Crossing." It told about 14
- Washington crossing the ⁵ delaware, ⁶ Delaware, 15
- a ¹ river near the place where his army... ² River 16
- was camped. ³ everyone liked our play... ⁴ Everyone 17
- Our teacher said, ⁵ "well done!" ⁶ "Well 18
- ¹ Your friend, ² your Friend, 19
- ³ barbara Richards ⁴ Barbara Richards 20

DIRECTIONS: Each exercise below has two numbered parts. One part is written well and makes good sense. The other is written poorly. Choose the good one and mark the answer space which has the same number as your choice.

- SAMPLE:** 1 We'll go when you are ready. ¹ ²
- 2 We'll go. When you are ready. 1 2
-
- 1 We boys can hardly wait until noon. 1 2
- Because then we play baseball. 21
- 2 We boys can hardly wait until noon, 1 2
- because then we play baseball. 21
-
- 3 First we eat our lunch. 3 4
- 4 First eat our lunch. 22
-
- 5 Usually eat in the lunchroom. 5 6
- 6 Most of us eat in the lunchroom. 23
-
- 1 Then we all run to the playground. 1 2
- 2 Then run to the playground. 24
-
- 3 Quickly we choose sides. 3 4
- 4 Quickly choosing sides. 25
-
- 5 Ready at last for baseball. 5 6
- 6 At last we are ready for baseball. 26
-
- 1 Children play on the grass. 1 2
- 2 Children playing on the grass. 27
-
- 3 Others were playing ball. On the school grounds. 3 4
- 4 Others were playing ball on the school grounds. 28
-
- 5 We stood around everybody watched. 5 6
- 6 We stood around. Everybody watched. 29
-
- 1 Babies creep on the floor. 1 2
- 2 Babies on the floor. 30
-
- 3 Often a game looks easy. 3 4
- 4 Because a game looks easy. 31
-
- 5 Where did your dog bury his bone? 5 6
- 6 Where your dog buried his bone? 32
-
- 1 A paved walk through the park. 1 2
- 2 A paved walk runs through the park. 33
-
- 3 Hearing loud talk outside. 3 4
- 4 We heard loud talk outside. 34

TEST 4 *Language* (Continued)← 8^a← 8^b

DIRECTIONS: In each sentence, decide which of the numbered words is correct. Then mark the answer space at the right which has the same number as the word you have chosen.

SAMPLE: Apples ¹ is ₂ are good..... 1 2

Why do ¹ them ₂ those cars go so fast?..... 1 2 35

Our ³ teacher she ₄ teacher opened the door..... 3 4 36

⁵ Aren't ₆ Ain't you boys afraid of falling?..... 5 6 37

Yesterday Mother ¹ says, "Come here." ₂ said..... 1 2 38

May John and ³ I ₄ me go home now?..... 3 4 39

⁵ It's ₆ Its fun to play tag..... 5 6 40

Two of ¹ we ₂ us children had mumps..... 1 2 41

Mother wouldn't give the baby ³ no ₄ any pie..... 3 4 42

My puppy has ⁵ grown ₆ grewed a lot..... 5 6 43

Who ¹ did ₂ done the dishes last night?..... 1 2 44

We ³ taught ₄ taught Ann to play jacks..... 3 4 45

Jane ⁵ drew ₆ drawed the highest number..... 5 6 46

I was ¹ born ₂ borned in Nebraska..... 1 2 47

How many ³ is ₄ are there on your side?..... 3 4 48

I wish he ⁵ had ₆ had of shut the door..... 5 6 49

Margaret could ¹ hear ₂ here the bell..... 1 2 50

The girls have ³ went ₄ gone skating..... 3 4 51

Has everyone ⁵ seen ₆ saw the pictures?..... 5 6 52

The burglar might ¹ of ₂ have gone this way... 1 2 53

My brother ³ doesn't ₄ don't care for peanuts.... 3 4 54

My marbles ⁵ was ₆ were right here..... 5 6 55

She wrote notes to ¹ him ₂ he and Sam..... 1 2 56

You must handle babies ³ careful. ₄ carefully..... 3 4 57

Have you ever been in ⁵ a ₆ an airplane?..... 5 6 58

We could build a boat ¹ easy. ₂ easily..... 1 2 59

Who ³ drank ₄ drunk my orange juice?..... 3 4 60

Tell me ⁵ whose ₆ who's going with us..... 5 6 61

Everybody ¹ choosed ₂ chose chocolate cookies. . . 1 2 62

Have you ³ written ₄ wrote to your grandmother? 3 4 63

Our problem is ⁵ to ₆ too find a match..... 5 6 64

My brother drives ¹ good ₂ well at night..... 1 2 65

The snow had ³ risen ₄ rose to the fence tops.... 3 4 66

Let's walk ⁵ threw ₆ through the park..... 5 6 67

The girls made the pie ¹ themselves. ₂ themselves. . . 1 2 68

Father ³ knew ₄ knowed where we had been..... 3 4 69

⁵ Your ₆ You're going to be late..... 5 6 70

These children ¹ hasn't got ₂ have no lunch 1 2 71

His dirty clothes ³ lay ₄ laid on the floor..... 3 4 72

The first bell had already ⁵ rang. ₆ rung..... 5 6 73

The boys are flying ¹ their ₂ there kites..... 1 2 74

Stop. No. right () × 2 ()

No. omitted or double marked ()

Sum ()

Subtract 74

DIFFERENCE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40		
Gr. score	below 10													10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	29	30	31	33	34	35	36	37	38	39	40
DIFFERENCE (Cont'd)	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74								
Gr. score	41	42	43	45	46	47	49	50	52	53	55	57	58	60	62	64	65	67	70	72	73	75	77	79	82	85	87	91	98	106	117	above 120										

TEST 5 *Arithmetic Reasoning*

DIRECTIONS: Find the answers to these problems as quickly as you can. Write the answer for each problem on the dotted line at the right of the problem. In problems of buying, pay no attention to a sales tax. Use a separate sheet to figure on.

PART I

- | | |
|---|---|
| <p>1 How many rabbits are 2 rabbits and 4 rabbits? -----</p> <p>2 One nest had 3 eggs and another had 5 eggs. How many eggs were in the two nests? -----</p> <p>3 We rode 5 miles east and 4 miles north. How many miles did we ride all together? -----</p> <p>4 Jane saw 3 white horses, 2 black ones, and 3 brown ones. How many horses did she see all together? -----</p> <p>5 How many children are there in a family of 6 boys and 2 girls? -----</p> <p>6 Bert has 7 cookies. If he gives 2 to his friend, how many will he have left? -----</p> <p>7 The milkman left 5 bottles of milk Monday. He left 2 yesterday and 2 today. How many bottles is this all together? -----</p> <p>8 Ted rode 4 miles on his bicycle Tuesday, 2 miles on Wednesday, and 3 miles on Thursday. How many miles did he ride on all three days? -----</p> <p>9 There are 9 songs in my music book. I have already learned 4 of them. How many have I still to learn? -----</p> <p>10 Alice has 7 dolls in each room. How many dolls are twice as many as 7 dolls? -----</p> <p>11 We counted 23 cows in one field, 8 in another, and 9 in another. How many cows did we count? -----</p> <p>12 Nancy missed 14 words on the test and got 36 right. How many words were there in the whole test? -----</p> <p>13 Mary has done 14 problems and Ruth has done 8. How many more problems must Ruth do to equal Mary? -----</p> | <p>14 Two dimes and three nickels are how many cents? -----</p> <p>15 Helen has 2 dozen pictures and Sue has 20 pictures. Helen has how many more pictures than Sue? -----</p> <p>16 Joan's cap cost 60 cents. She gave the clerk a half dollar and a quarter. How many cents in change should she get back? -----</p> <p>17 Bill bought a toy for 46 cents and had 29 cents left. How many cents did he have before he bought the toy? -----</p> <p>18 Jim has a book with 168 pages. He has read 92 pages. How many pages does he have left to read? -----</p> <p>19 John had 8 marbles. Ted gave him 16 and Lee gave him 18. How many marbles did he have then? -----</p> <p>20 Mrs. Gray buys 79 cents' worth of groceries. How many cents change should she receive from a dollar bill? -----</p> <p>21 Our school bought 39 desks last year and 16 this year. How many desks did the school buy in these two years? -----</p> <p>22 Tom and Ann have 2 rubber balls and 8 toy cars. Their friends have 9 rubber balls and 4 toy cars. How many rubber balls do all of them have together? -----</p> <p>23 Bob has 27 sheets of paper to give out. How many children will get paper if Bob gives each child 3 sheets? -----</p> <p>24 How many onion plants will be needed for the school garden? There are to be 7 rows with 24 onions in each row. -----</p> |
|---|---|

TEST 5 *Arithmetic Reasoning* (Continued)

25 Mr. Brown wants to divide 128 hens into two equal groups to put in different coops. How many hens will be in each coop? -----

26 There are 28 children in our room. If there were exactly that many in every one of the 12 rooms in the school, how many children would there be all together? -----

27 Eight children agreed to share safety duties equally for the entire year. How many days of duty would there be for each child if there were 176 days of school? -----

28 In the last 8 weeks, Betty practiced a total of 104 hours on the piano. That is an average of how many hours each week? -----

29 Mother bought groceries for \$1.19. She paid the man two half dollars and a quarter. How many cents change should she receive? -----

30 Eight families decided to share equally the cost of a neighborhood supper. The cost was \$7.68. How many cents was each family's share? -----

PART II

31 Write the one of these that is used to show how long a thing is: -----

qt. lb. ¢ in.

32 Write the one of these which is the smallest: quart pint cup gallon -----

33 Which of these four numbers is the largest? -----

187 98 678 811

34 Which month comes next after February? -----

35 How many buns are there in a half-dozen? -----

36 What number is written under the space where Wednesday (Wed.) should be? -----

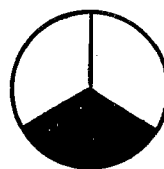
MAY						
	Mon.				Fri.	Sat.
1	2	3	4	5	6	7

37 Write the number that would come next after these three: -----

9 12 15 ?

38 One of these numbers tells about how many feet tall most children in this room are. Think about how tall most children in this room are. Write the one of these numbers which tells most nearly. -----

2 4 6 8



39 Write the fraction which tells what part of this circle is black. -----

40 A yard is how many feet? -----

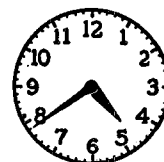
41 Which is the largest? -----

$\frac{1}{2}$ $\frac{1}{8}$ $\frac{1}{9}$ $\frac{1}{4}$

42 Which figure in this number is in the tens place? -----

6753

43 Write the Roman numeral XXIV in figures. -----



44 How many minutes until 5 o'clock is it by this clock? -----

45 Here is part of a radio program. How many minutes long is the News program? -----

News	6:00
Moon Boys	6:15
Moon Boys	6:30
Music	6:45

No. RIGHT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Gr. score	10	11	12	13	14	15	17	19	20	22	23	25	26	28	29	30	31	33	34	35	36	37	38	39	40	41	42	44	45	46	47	48	49	50	51	52	54	56	59	62	65	68	72	76	80

Stop.

TEST 6 *Arithmetic Computation*

DIRECTIONS: Look at each example carefully to see what you are to do. Do the examples and copy your answers in the column marked "Answers" at the right.

SAMPLE A		SAMPLE B		1	2	3	Answers			
$\begin{array}{r} 2 \\ + 2 \\ \hline 4 \end{array}$		$\begin{array}{r} 6 \\ - 1 \\ \hline 5 \end{array}$		$\begin{array}{r} 2 \\ + 7 \\ \hline \end{array}$	$\begin{array}{r} 5 \\ + 4 \\ \hline \end{array}$	$\begin{array}{r} 10 \\ - 2 \\ \hline \end{array}$	A <u>4</u> B <u>5</u> 1 _____ 2 _____ 3 _____			
4	$\begin{array}{r} 3 \\ + 4 \\ \hline \end{array}$	5	$\begin{array}{r} 7 \\ - 3 \\ \hline \end{array}$	6 Add	$\begin{array}{r} 1 \\ 5 \\ 3 \\ \hline \end{array}$	7	$\begin{array}{r} 8 \\ - 6 \\ \hline \end{array}$	8	$\begin{array}{r} 40 \\ + 39 \\ \hline \end{array}$	4 _____ 5 _____ 6 _____ 7 _____ 8 _____
9	$\begin{array}{r} 56 \\ - 23 \\ \hline \end{array}$	10	$\begin{array}{r} 87 \\ - 54 \\ \hline \end{array}$	11	$\begin{array}{r} 35 \\ + 72 \\ \hline \end{array}$	12	$\begin{array}{r} 59 \\ - 3 \\ \hline \end{array}$	13	$\begin{array}{r} 37 \\ - 32 \\ \hline \end{array}$	9 _____ 10 _____ 11 _____ 12 _____ 13 _____
14	13 - 4 =	15	$\begin{array}{r} 3 \\ \times 3 \\ \hline \end{array}$	16	$\begin{array}{r} 626 \\ + 235 \\ \hline \end{array}$	17	25 + 9 =	18	$\begin{array}{r} 119 \\ - 52 \\ \hline \end{array}$	14 _____ 15 _____ 16 _____ 17 _____ 18 _____
19	2)10	20	$\begin{array}{r} 93 \\ \times 2 \\ \hline \end{array}$	21		$\begin{array}{r} \$3.80 \\ + 9.63 \\ \hline \$ \end{array}$		22	$\begin{array}{r} 215 \\ \times 4 \\ \hline \end{array}$	19 _____ 20 _____ 21 \$ _____ 22 _____

TEST 6 *Arithmetic Computation* (Continued)

23	24	25	26	Answers
$7 \times 7 =$	Add $\begin{array}{r} 467 \\ 79 \\ 20 \\ \hline 855 \end{array}$	$\begin{array}{r} 522 \\ - 495 \\ \hline \end{array}$	$\begin{array}{r} 3 \overline{)126} \end{array}$	23 ----- 24 ----- 25 ----- 26 -----
27	28	29	30	27 ----- 28 ----- 29 ----- 30 -----
$\begin{array}{r} 609 \\ \times 3 \\ \hline \end{array}$	Add $\begin{array}{r} 5983 \\ 6785 \\ \hline 5657 \end{array}$	$28 \div 7 =$	$\begin{array}{r} 600 \\ - 552 \\ \hline \end{array}$	
31	32	33	34	31 \$ ----- 32 ----- 33 \$ ----- 34 -----
$\begin{array}{r} \$3.42 \\ - 3.08 \\ \hline \$ \end{array}$	$\begin{array}{r} 413 \\ - 368 \\ \hline \end{array}$	$\begin{array}{r} \$8.34 \\ \times 8 \\ \hline \$ \end{array}$	$\begin{array}{r} 79 \\ \times 13 \\ \hline \end{array}$	
35	36	37	38	35 ----- 36 ----- 37 ----- 38 -----
$\begin{array}{r} 5 \overline{)3525} \end{array}$	$\begin{array}{r} 83 \\ \times 60 \\ \hline \end{array}$	$\begin{array}{r} 24 \overline{)48} \end{array}$	$\begin{array}{r} \frac{1}{3} \\ + \frac{1}{3} \\ \hline \end{array}$	
39	40	41	42	39 \$ ----- 40 ----- 41 ----- 42 -----
$\begin{array}{r} \$ \\ 5 \overline{) \$3.48} \end{array}$	$\begin{array}{r} 800 \\ \times 407 \\ \hline \end{array}$	$\begin{array}{r} 879 \\ \times 908 \\ \hline \end{array}$	$\begin{array}{r} 34 \overline{)2219} \end{array}$	

Stop.

No. RIGHT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42
Gr. score	10	12	13	15	17	19	20	22	23	24	25	26	27	28	29	30	31	32	33	34	36	37	38	39	40	42	43	44	46	48	50	51	53	55	58	61	66	71	76	80		

STANFORD ACHIEVEMENT TEST

TRUMAN L. KELLEY • RICHARD MADDEN • ERIC F. GARDNER • LEWIS M. TERMAN • GILES M. RUCH

Name_____ Age_____ Grade_____ Boy or girl_____

Teacher_____ School_____ Date of birth_____

Year Month Day

City or Town_____ State_____ Date_____

	1 PAR. MEAN.	2 WORD MEAN.	AVER. READ.	3 SPELL.	4 LANG.	5 ARITH. REAS.	6 ARITH. COMP.	AVER. ARITH.	BATTERY MEDIAN
Grade Equiv.									
Age Equiv.									
%ile Rank									

Individual Profile Chart																											
	GRADE SCORE SCALE																										
	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	129								
1 Par. Mean.																											1 Par. Mean.
2 Word Mean.																											2 Word Mean.
3 Spell.																											3 Spell.
4 Lang.																											4 Lang.
5 Arith. Reas.																											5 Arith. Reas.
6 Arith. Comp.																											6 Arith. Comp.
Batt. Mdn.																											Batt. Mdn.
	4.0	4.5	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	12.9								
GRADE EQUIVALENT SCALE																											

Grade equivalent values above 10.0 are extrapolated values and not to be interpreted as signifying the typical performance of pupils of the indicated grade placement. (See Directions for Administering.)

Issued 1953 by World Book Company, Yonkers-on-Hudson, New York, and Chicago, Illinois
Copyright 1952 by World Book Company. Copyright in Great Britain. All rights reserved. PRINTED IN U.S.A. SAT: ADV. PARTIAL: J-4

This test is copyrighted. The reproduction of any part of it by mimeograph, hectograph, or in any other way, whether the reproductions are sold or are furnished free for use, is a violation of the copyright law.

TEST 1 *Paragraph Meaning*

DIRECTIONS: Read each paragraph below. Decide which one of the numbered words at the right is best for each blank, and then mark the answer space which is numbered the same as the word you have chosen. Study the sample below, and answer the other questions in the same way.

SAMPLE: I am shorter than my sister and taller than my brother.
This morning we stood beside one another. I looked
down at my 51 and 52 at my sister.

51	1 friend 3 sister	2 brother 4 feet	1 51	2 51	3 51	4 51
52	5 around 7 up	6 back 8 down	5 52	6 52	7 52	8 52

1 The children went to the circus. They saw elephants and monkeys and many other animals. There were many clowns and lots of popcorn and peanuts. The children said that they wished a 1 would come every day.

1	1 parade 3 circus	2 clown 4 monkey	1 1	2 1	3 1	4 1
---	----------------------	---------------------	--------	--------	--------	--------

2-3 The gold used for jewelry is mixed with another metal, usually copper. Pure gold is very soft, and jewelry made of it would not wear well. Therefore, copper or some other 2 is mixed with the gold to make it 3.

2	1 metal 3 material	2 mineral 4 chemical	1 2	2 2	3 2	4 2
3	5 brighter 7 softer	6 prettier 8 harder	5 3	6 3	7 3	8 3

4-5 Insects that fly at night often make mistakes. It may be that they cannot tell the light of the moon from that given by an open fire. Sometimes these 4 fly into a 5 and are killed.

4	1 animals 3 moths	2 insects 4 birds	1 4	2 4	3 4	4 4
5	5 window 7 flame	6 house 8 car	5 5	6 5	7 5	8 5

6 I go to bed at seven o'clock. Bob stays up until eight. We both rise at seven o'clock in the morning. Bob sleeps an hour 6 than I do.

6	1 longer 3 later	2 more 4 less	1 6	2 6	3 6	4 6
---	---------------------	------------------	--------	--------	--------	--------

7-8-9 Wool is clipped from live sheep by a process called shearing. The entire mat of fleece from each animal comes off in a single piece. With electric clippers one man can 7 from 150 to 200 8 a day. After shearing, the 9 is rolled up and sent to the mill.

7	1 clip 3 kill	2 run 4 feed	1 7	2 7	3 7	4 7
8	5 pounds 7 lambs	6 sheep 8 pelts	5 8	6 8	7 8	8 8
9	9 skin 11 fleece	10 hide 12 cotton	9 9	10 9	11 9	12 9

10-11-12-13 A few years ago most freight was carried by railroad trains. Now such things as furniture and even automobiles are sent across country on trucks. Goods sent by 10 can go only where 11 have been laid, but goods sent by 12 can reach any point to which a 13 runs.

10	1 truck 3 freight	2 rail 4 express	1 10	2 10	3 10	4 10
11	5 roads 7 tracks	6 paths 8 highways	5 11	6 11	7 11	8 11
12	9 truck 11 freight	10 rail 12 express	9 12	10 12	11 12	12 12
13	13 drive 15 track	14 trail 16 road	13 13	14 13	15 13	16 13

14-15 A long time ago the people of Peru did not know how to write. In order to count, they tied knots in threads of different colors. Each color meant a different kind of thing. The 14 in a thread stood for the things being 15.

14	1 knots 3 loops	2 colors 4 twists	1 14	2 14	3 14	4 14
15	5 counted 7 written	6 named 8 used	5 15	6 15	7 15	8 15

Go on to the next page.

TEST 1 *Paragraph Meaning* (Continued)

16-17-18 The dog, first domesticated during the Old Stone Age, belongs to the same family as the wolf, jackal, and fox. It is believed that some breeds of dogs resulted from crossing two of these three animals, but perhaps not all dogs had the same ancestors. Many breeds have developed since the 16. It is hard to see anything of the 17 in the barkless dog of the North American Indians, or any kinship between the 18 and the cocker spaniel.

16	1 great mi- gration	2 Stone Age	16	1	2	3	4
	3 American revolution	4 First World War					
17	5 jaguar	6 lynx	17	5	6	7	8
	7 jackal	8 puma					
18	9 badger	10 antelope	18	9	10	11	12
	11 leopard	12 wolf					

19-20 Ventriloquism is the art of making sounds so that they appear to come from a distance rather than from the speaker's own mouth. It is an ancient 19, and many authorities believe that various phenomena such as the Greek oracles and the Egyptian speaking statues owe their explanation to the practice of 20 by the priests.

19	1 science	2 art	19	1	2	3	4
	3 custom	4 event					
20	5 deceit	6 mystery	20	5	6	7	8
	7 prophecy	8 ventrilo- quism					

21-22 Crude oil from wells in Texas and other Western states is now transported in pipes to refineries in such distant states as California, Illinois, and Pennsylvania. Pumping stations are located 25 to 40 miles apart along each pipe line. From storage tanks near the wells the oil passes into the 21 and is 22 to the refineries.

21	1 tankers	2 pipe lines	21	1	2	3	4
	3 tank cars	4 oil trucks					
22	5 shipped	6 tricked	22	5	6	7	8
	7 hauled	8 pumped					

23-24-25 A common example of a chemical reaction is the rusting of iron. A gas called oxygen which is present in the air combines with the silvery metal iron to form a reddish brown substance known in chemistry as ferrous oxide, but commonly called 23. This substance is quite different from either the 24 or the 25 which combined to form it.

23	1 iron	2 oxygen	23	1	2	3	4
	3 copper	4 rust					
24	5 iron	6 copper	24	5	6	7	8
	7 rust	8 gas					
25	9 oxide	10 oxygen	25	9	10	11	12
	11 air	12 moisture					

26 During the French and Indian War more than one hundred English colonists were captured by the Indians at Deerfield, Massachusetts, and taken into the forest. Later, some were ransomed but many refused to return to 26.

26	1 Pennsyl- vania	2 custody	26	1	2	3	4
	3 captivity	4 civilization					

27-28-29 Architectural styles are the result of social, technical, and environmental factors. The flat-roofed houses of the Egyptians and the Aztecs were practical because of dry climates. This illustrates the 27 factor. For heavy structures both peoples used the pyramid, rather than beams, buttresses, girders, etc. This illustrates the 28 factor. The decorations of these two peoples were widely different because of traditions and aesthetic standards. This illustrates the 29 factor.

27	1 environ- mental	2 technical	27	1	2	3	4
	3 social	4 common					
28	5 environ- mental	6 technical	28	5	6	7	8
	7 social	8 common					
29	9 environ- mental	10 technical	29	9	10	11	12
	11 social	12 common					

30-31-32 The windward side of a great mountain chain has plenty of rainfall, whereas the regions on its lee are more arid. This difference is due to the fact that when prevailing winds strike high mountains, precipitation occurs and relatively little moisture is carried over the crest. Thus, the regions lying on the 30 side of mountain chains are better suited to 31 than those protected from the 32.

30	1 windward	2 northern	30	1	2	3	4
	3 southern	4 front					
31	5 mining	6 defense	31	5	6	7	8
	7 agriculture	8 sheep raising					
32	9 westerlies	10 northerlies	32	9	10	11	12
	11 hurricanes	12 prevailing winds					

TEST 1 *Paragraph Meaning* (Continued)

44

33-34 A dinosaur called "stegosaurus" had a brain-like nerve center inside his skull, and another, larger one in the region of the pelvis. This latter controlled the reptile's heavy tail, which was armed with horn-like spines. Because of the dominance of the rear 33, scientists jokingly ask whether the 34 wagged his tail, or vice versa.

1	spines	2	nerve center	1	2	3	4
33		33					
3	pelvis	4	head				
5	reptile	6	mastodon	5	6	7	8
34		34					
7	man-eater	8	mammal				

35-36-37 Much of the history of man might be written in terms of ocean currents. The warm Gulf Stream contributes so much to the temperatures of England and northern Europe that if somehow it could be cut off, the region of the British Isles would be nearly uninhabitable. The mass of frigid arctic water helps bend the 35 to take a 36 direction and is itself prevented from reaching the 37.

1	Gulf Stream	2	Polar Current	1	2	3	4
35		35					
3	Japan Current	4	Atlantic				
5	northward	6	westerly	5	6	7	8
36		36					
7	north-easterly	8	southeast-erly				
9	Gulf Stream	10	Atlantic	9	10	11	12
37		37					
11	British Isles	12	Newfoundland Coast				

38-39 The noun *radical* comes from the Latin word for root. A radical is something fundamental, or at the root of things. One who wishes to upset the government is a radical because he wishes to make fundamental changes. In chemistry the fundamental parts of a compound are radicals. Recently a critic of radicalism denounced a professor's book entitled "Organic Radicals in the Presence of Catalysts." It is reasonable to assume that the subject matter of the book was 38. A dictionary would inform one that catalysts are chemical agents and not foreign agents. The critic should conclude that the book was 39.

1	radical	2	subversive	1	2	3	4
38		38					
3	unfamiliar to the critic	4	entertaining				
5	about astronomy	6	un-American	5	6	7	8
39		39					
7	subversive	8	about chemistry				

40 Unusual meanings are sometimes attached to words. For as long as we have a record, "seeding" has meant putting seeds into the ground to grow into mature plants. "Cloud seeding" is an attempt to 40.

1	put seeds into the ground	2	put seeds into clouds	1	2	3	4
40		40					
3	make seeds mature	4	make rain				

41-42 Myths are imaginary tales and have for their heroes gods and goddesses. In fables animals talk and have the characteristics of human beings. Apollo, the sun-god, figures prominently in many Greek 41. The story of the "Dog in the Manger" is one of the most familiar 42.

1	fables	2	legends	1	2	3	4
41		41					
3	myths	4	histories				
5	myths	6	fables	5	6	7	8
42		42					
7	legends	8	anecdotes				

43-44 Symbiosis is a very interesting biological phenomenon. It is the intimate living together of two different forms of life. For example, the Yucca, a desert plant, has its pollen carried from one flower to another by the Yucca moth only. This moth lays its eggs in a Yucca seed pod; the eggs hatch; the larvae eat some seeds and nothing else; they turn into moths, get covered with pollen, fly to a second Yucca blossom, carrying the pollen and fertilizing the seeds of the second plant. Thus 43. The scientific term for wonderful cases like this is 44.

1	the moth helps the Yucca	2	the Yucca helps the moth	1	2	3	4
43		43					
3	each helps the other	4	each is necessary to the other				
5	evolution	6	mutual aid	5	6	7	8
44		44					
7	symbiotic union	8	biologic accommodation				

Stop.

No. RIGHT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
Gr. score	18	20	22	24	25	26	28	30	32	33	35	37	39	41	43	44	46	49	51	53	55	57	59	62	64	67	70	73	76	80	84	88	93	97	101	105	108	111	114	117	120	123	127	129

TEST 2 *Word Meaning*

DIRECTIONS: In each exercise decide which of the four numbered words will complete the sentence best. Look at the number of this word. Mark the answer space at the right which is numbered the same as the word you have chosen. Study the samples.

SAMPLES:

- | | | | | | | | | | |
|--|----------|-----------|------------|----------|----|---|---|---|---|
| 51 The day that comes after Friday is — | 1 Monday | 2 Tuesday | 3 Saturday | 4 Sunday | 51 | 1 | 2 | 3 | 4 |
| | | | | | | 5 | 6 | 7 | 8 |
| 52 To draw on a blackboard, use a piece of — | 5 pencil | 6 straw | 7 eraser | 8 chalk | 52 | 1 | 2 | 3 | 4 |
| | | | | | | 5 | 6 | 7 | 8 |
-
- | | | | | | | | | | |
|--|----------------|--------------------|---------------|------------------|----|---|---|---|---|
| 1 Mary Smith and John Doe are cousins if they have the same — | 1 grandmother | 2 mother | 3 sister | 4 daughter | 1 | 1 | 2 | 3 | 4 |
| | | | | | | 5 | 6 | 7 | 8 |
| 2 Marvelous means — | 5 pleasant | 6 distant | 7 wonderful | 8 great | 2 | 1 | 2 | 3 | 4 |
| | | | | | | 5 | 6 | 7 | 8 |
| 3 To lash is to — | 1 deceive | 2 whip | 3 destroy | 4 waste | 3 | 1 | 2 | 3 | 4 |
| | | | | | | 5 | 6 | 7 | 8 |
| 4 Anyone over 21 years old is — | 5 a graduate | 6 an adult | 7 a major | 8 a patriot | 4 | 1 | 2 | 3 | 4 |
| | | | | | | 5 | 6 | 7 | 8 |
| 5 If you can identify a butterfly, you can — | 1 exhibit it | 2 stuff it | 3 mount it | 4 recognize it | 5 | 1 | 2 | 3 | 4 |
| | | | | | | 5 | 6 | 7 | 8 |
| 6 Something you must do, such as paying taxes, is — | 5 a custom | 6 a sacrifice | 7 a duty | 8 an opportunity | 6 | 1 | 2 | 3 | 4 |
| | | | | | | 5 | 6 | 7 | 8 |
| 7 Height, weight, and temperature are all — | 1 distances | 2 visible | 3 feelings | 4 measurements | 7 | 1 | 2 | 3 | 4 |
| | | | | | | 5 | 6 | 7 | 8 |
| 8 Groceries arranged to attract customers are — | 5 displays | 6 campaigns | 7 evidence | 8 bargains | 8 | 1 | 2 | 3 | 4 |
| | | | | | | 5 | 6 | 7 | 8 |
| 9 To attempt a job is to — | 1 condemn it | 2 oppose it | 3 imagine it | 4 undertake it | 9 | 1 | 2 | 3 | 4 |
| | | | | | | 5 | 6 | 7 | 8 |
| 10 Things which are much alike are — | 5 equal | 6 handsome | 7 similar | 8 opposite | 10 | 1 | 2 | 3 | 4 |
| | | | | | | 5 | 6 | 7 | 8 |
| 11 A small thing given as evidence of good faith is a — | 1 petition | 2 spindle | 3 token | 4 goblet | 11 | 1 | 2 | 3 | 4 |
| | | | | | | 5 | 6 | 7 | 8 |
| 12 A person elected to office should be — | 5 confused | 6 pitied | 7 capable | 8 noble | 12 | 1 | 2 | 3 | 4 |
| | | | | | | 5 | 6 | 7 | 8 |
| 13 When you don't sense anything which is going on about you, you are — | 1 unconscious | 2 sullen | 3 prosperous | 4 sensible | 13 | 1 | 2 | 3 | 4 |
| | | | | | | 5 | 6 | 7 | 8 |
| 14 The group of men who run a business are its — | 5 managers | 6 customers | 7 salesmen | 8 engineers | 14 | 1 | 2 | 3 | 4 |
| | | | | | | 5 | 6 | 7 | 8 |
| 15 Saving money for a "rainy day" is — | 1 likable | 2 industrial | 3 fearful | 4 advisable | 15 | 1 | 2 | 3 | 4 |
| | | | | | | 5 | 6 | 7 | 8 |
| 16 People who write letters to each other — | 5 correspond | 6 translate | 7 interrupt | 8 interview | 16 | 1 | 2 | 3 | 4 |
| | | | | | | 5 | 6 | 7 | 8 |
| 17 The dead body of a wild animal is a — | 1 vestige | 2 carcass | 3 corpuscle | 4 corruption | 17 | 1 | 2 | 3 | 4 |
| | | | | | | 5 | 6 | 7 | 8 |
| 18 When you have learned your next lesson well, you are — | 5 mistaken | 6 prepared | 7 discouraged | 8 educated | 18 | 1 | 2 | 3 | 4 |
| | | | | | | 5 | 6 | 7 | 8 |
| 19 Any statement about which there is question is — | 1 vagrant | 2 elastic | 3 appreciable | 4 debatable | 19 | 1 | 2 | 3 | 4 |
| | | | | | | 5 | 6 | 7 | 8 |
| 20 When a person repeatedly fails at something he wants to do, he may become — | 5 buoyant | 6 frustrated | 7 fruitless | 8 drenched | 20 | 1 | 2 | 3 | 4 |
| | | | | | | 5 | 6 | 7 | 8 |
| 21 Something written about or talked about is — | 1 a token | 2 a topic | 3 a title | 4 an article | 21 | 1 | 2 | 3 | 4 |
| | | | | | | 5 | 6 | 7 | 8 |
| 22 If you have made up your mind about something, you have — | 5 a conviction | 6 an investigation | 7 a sermon | 8 a doubt | 22 | 1 | 2 | 3 | 4 |
| | | | | | | 5 | 6 | 7 | 8 |

TEST 2 *Word Meaning* (Continued)

- 23 Clothing of any kind is called — 1 woollens 2 apparel 3 robes 4 draperies 23
- 24 Money wasted foolishly is — 5 proffered 6 severed 7 scandalized 8 squandered 24
- 25 If everybody agrees upon a plan, the agreement is —
1 unanimous 2 moderate 3 proportional 4 conscientious 25
- 26 An individual who insists upon doing things his way only is —
5 nimble 6 obstinate 7 kingly 8 towering 26
- 27 When a man seeks a position with a certain firm, he becomes —
1 an applicant 2 a suitor 3 a petitioner 4 a contractor 27
- 28 A dramatic event in a story is called —
5 an epistle 6 a nucleus 7 a novelette 8 an episode 28
- 29 "She has a good chance to recover" means that improvement is —
1 certain 2 assured 3 impossible 4 probable 29
- 30 A difficulty to be overcome is — 5 an obstacle 6 a miracle 7 a vehicle 8 a barnacle 30
- 31 The way an army executes its campaigns is called its —
1 enmity 2 eclipse 3 tactics 4 treatise 31
- 32 A beginner in some sport is — 5 a novice 6 a professional 7 a private 8 an assailant 32
- 33 In a story meant to teach something, the teaching is called the —
1 fable 2 myth 3 plot 4 moral 33
- 34 One who works hard is — 5 brazen 6 alluring 7 ancestral 8 diligent 34
- 35 A daily newspaper calls the number of papers it sells each day its —
1 administration 2 attraction 3 circulation 4 introduction 35
- 36 Any very long, unpleasant experience is —
5 an ordeal 6 an offense 7 a vigil 8 a seclusion 36
- 37 One senator speaks of another senator as his —
1 collector 2 elector 3 colleague 4 chaplain 37
- 38 Spotlessly clean clothes are — 5 blanched 6 immaculate 7 stark 8 purged 38
- 39 A small event that is part of a story is — 1 a plot 2 an epic 3 an incident 4 an era 39
- 40 Any national issue over which there is disagreement is —
5 controversial 6 contraband 7 tabu 8 subversive 40
- 41 Corrupt politics are due largely to public —
1 responsiveness 2 antagonism 3 degradation 4 indifference 41
- 42 To destroy something completely is to —
5 detract it 6 distort it 7 annihilate it 8 depress it 42
- 43 A very exact measurement is — 1 absolute 2 concise 3 precise 4 fundamental 43
- 44 The "crossing" of two or more kinds of grain produces —
5 mongrels 6 hybrids 7 formulas 8 chaff 44
- 45 An interesting conversationalist often has a store of —
1 denominations 2 anecdotes 3 alibis 4 conveyances 45
- 46 Sometimes an opinion on a subject is changed after —
5 consternation 6 delegation 7 dissolution 8 deliberation 46

No. right	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46
Gr. score	26	27	29	30	31	33	34	36	38	40	42	44	46	48	50	53	55	57	59	62	64	67	69	71	73	75	77	79	82	84	86	88	90	93	96	99	101	104	107	110	113	116	119	122	125	129

TEST 3 *Spelling*

← 7a

← 7b

DIRECTIONS: In each exercise below, one of the words is spelled in three different ways. If the correct spelling is there, mark the answer space which has the same number as the correct spelling. If the correct spelling is not given as one of the three spellings, mark the answer space under NG as the right answer; NG stands for not given.

SAMPLES:

91 The color is 1 rid. 1 2 3 NG
2 red. 91
3 rud.

92 an 4 eg 4 5 6 NG
5 egge for breakfast. 92
6 eeg

1 bedroom 1 furnitur 1 2 3 NG
2 furnituer. 1
3 furniture

2 Sally plays the 4 piano. 4 5 6 NG
5 peano. 2
6 paino.

3 Sam saw the 1 smock 1 2 3 NG
2 smok from the fire. 3
3 smoak

4 A 4 lawyer 4 5 6 NG
5 lauyer defended him. 4
6 lawer

5 He took the doctor's 1 medicene. 1 2 3 NG
2 medicine. 5
3 medicen.

6 They will come 4 agian. 4 5 6 NG
5 agen. 6
6 agan.

7 The guards moved 1 quitly. 1 2 3 NG
2 quietly. 7
3 quitely.

8 Let's 4 explore 4 5 6 NG
5 exsplore the cave. 8
6 explor

9 I heard the 1 speech. 1 2 3 NG
2 spech. 9
3 speech.

10 There is 4 durt 4 5 6 NG
5 drite on his hands. 10
6 dirte

11 The sand slowly 1 setteld 1 2 3 NG
2 settled in the jar. 11
3 settled

12 Joe studies 4 geogrophy. 4 5 6 NG
5 geography. 12
6 geogerphy.

13 The 1 famely 1 2 3 NG
2 famly is at home. 13
3 famley

14 Jack plays the 4 rol 4 5 6 NG
5 roal of the hero. 14
6 role

15 The road rises 1 gradually. 1 2 3 NG
2 gradually. 15
3 graduly.

16 Spinach has many 4 vitamins. 4 5 6 NG
5 vitamens. 16
6 vitemins.

17 Don't be 1 impatient. 1 2 3 NG
2 impateint. 17
3 impationt.

18 John's voice is 4 horse. 4 5 6 NG
5 hourse. 18
6 hoarse.

19 a tennis 1 tournament 1 2 3 NG
2 torniment. 19
3 tornament

20 He 4 realey 4 5 6 NG
5 realy liked it. 20
6 reelly

21 It rains 1 frequently. 1 2 3 NG
2 frequently. 21
3 frequently.

22 an 4 unfortunate 4 5 6 NG
5 unfortunat mistake. 22
6 unfortunette

23 We read good 1 literiture. 1 2 3 NG
2 lirture. 23
3 literature.

24 Ruth is 4 genrally 4 5 6 NG
5 generally here. 24
6 generally

25 Father 1 rarly 1 2 3 NG
2 rarely goes hunting. 25
3 rarley

26 The 4 berres 4 5 6 NG
5 berry's are ripe. 26
6 beries

27 We saw the 1 prittiest 1 2 3 NG
2 prittest flowers. 27
3 prettest

28 My uncle studies 4 philosophy. 4 5 6 NG
5 filosophy. 28
6 philosofy.

29 No chairs were 1 avable. 1 2 3 NG
2 avialable. 29
3 available.

30 Anne has a 4 magority 4 5 6 NG
5 majority vote. 30
6 majorety

31 Sue 1 eventually 1 2 3 NG
2 eventually arrived. 31
3 eventally

32 He is 4 ignorrent 4 5 6 NG
5 ignorent of the facts. 32
6 ignorant

33 the 1 ofensive 1 2 3 NG
2 offensive team. 33
3 ofensive

34 We saw him in the 4 vicinity. 4 5 6 NG
5 vicinity. 34
6 visinity.

35 No cause was 1 apparant. 1 2 3 NG
2 apparrent. 35
3 apparent.

36 in friendly 4 terratory 4 5 6 NG
5 teritory. 36
6 teratory

37 Chemistry is a 1 sciense. 1 2 3 NG
2 sceince. 37
3 sience.

38 Jane is respected for her 4 sincerity. 4 5 6 NG
5 sincirety. 38
6 sinserity.

TEST 3 *Spelling* (Continued)← 8^a← 8^b

39 The moon enters a new	1 phaze. 2 phase. 3 fase.	1 39 1	2 1	3 1	NG 1
40 He is a college	4 proffessor. 5 profesor. 6 professor.	4 40 1	5 1	6 1	NG 1
41 very	1 conscious 2 concious 3 consious	1 41 1	2 1	3 1	NG 1
42 The scene is	4 picheresque. 5 picturesque. 6 picherest.	4 42 1	5 1	6 1	NG 1
43 wired for	1 electrizity 2 electrecity 3 electriscity	1 43 1	2 1	3 1	NG 1
44 The two lines are	4 paralell. 5 parellel. 6 parallel.	4 44 1	5 1	6 1	NG 1
45 The firm was a	1 finacial 2 financcail success. 3 financial	1 45 1	2 1	3 1	NG 1
46 extreme	4 simplacity 5 simplicity 6 simplisity	4 46 1	5 1	6 1	NG 1
47 The loss is	1 insignificant. 2 insignifacent. 3 insignificant.	1 47 1	2 1	3 1	NG 1
48 Such an idea is	4 abserd. 5 absurd. 6 absurd.	4 48 1	5 1	6 1	NG 1
49 Perhaps I	1 imagine 2 imagine it. 3 imagin	1 49 1	2 1	3 1	NG 1
50 The	4 blizzerd 5 blissard brought snow. 6 blizard	4 50 1	5 1	6 1	NG 1
51 It is not	1 necessarily 2 necessarily wrong. 3 necesarily	1 51 1	2 1	3 1	NG 1
52 Alice did not	4 apoligize. 5 apologize. 6 apologise.	4 52 1	5 1	6 1	NG 1
53 The task was done with	1 facility. 2 fasility. 3 facility.	1 53 1	2 1	3 1	NG 1
54 Betty made	4 prier 5 priar arrangements. 6 prior	4 54 1	5 1	6 1	NG 1
55 Jim ate a hot	1 biscut. 2 bisciut. 3 bisket.	1 55 1	2 1	3 1	NG 1
56 It is a	4 fundamental 5 fundemental rule. 6 fundimental	4 56 1	5 1	6 1	NG 1
57 My	1 concience 2 conscience is clear. 3 consience	1 57 1	2 1	3 1	NG 1
58 a	4 scarcity 5 scarcaty of food. 6 scarsity	4 58 1	5 1	6 1	NG 1
59 It is a boy's club	1 enitiation. 2 initiation. 3 initiation.	1 59 1	2 1	3 1	NG 1
60 The cost of	4 admition 5 admision is low. 6 addmission	4 60 1	5 1	6 1	NG 1
61 An	1 airial 2 aerial is on the roof. 3 aereal	1 61 1	2 1	3 1	NG 1
62 The ship was	4 imence. 5 immence. 6 immense.	4 62 1	5 1	6 1	NG 1
63 We are	1 privaleged 2 priviledged to help. 3 privileged	1 63 1	2 1	3 1	NG 1
64 Dan will pay the	4 expence. 5 expents. 6 expens.	4 64 1	5 1	6 1	NG 1
65 a	1 comparativly 2 comparatively small one. 3 compactively	1 65 1	2 1	3 1	NG 1
66 The vote was	4 unanimous. 5 unanmous. 6 unanamous.	4 66 1	5 1	6 1	NG 1
67 The	1 indetedness 2 indebtedness is heavy. 3 indeteness	1 67 1	2 1	3 1	NG 1
68 The answer is	4 logicle. 5 lodgical. 6 lojicle.	4 68 1	5 1	6 1	NG 1
69 Bob had a fine	1 recommendation. 2 reccommendation. 3 recommendation.	1 69 1	2 1	3 1	NG 1
70 a cough from	4 bronchitis 5 bronchytes 6 bronchites	4 70 1	5 1	6 1	NG 1
71 The meeting is	1 adjuorned. 2 adjorned. 3 adjurned.	1 71 1	2 1	3 1	NG 1
72 to	4 perceive 5 precieve the truth 6 preceive	4 72 1	5 1	6 1	NG 1

Stop.

No. RIGHT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40		
Gr. score	25	26	27	28	29	30	31	32	33	34	35	37	38	40	41	42	43	45	46	48	49	50	52	53	55	56	57	59	60	61	62	63	64	65	67	68	69	70	71	73		
No. RIGHT (Cont'd)	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72										
Gr. score	74	75	76	77	78	79	80	81	83	84	86	87	89	91	94	96	98	100	102	105	107	110	112	114	117	119	121	124	126	128	129	129										

TEST 4 *Language*

9a

9b

DIRECTIONS: In each pair of words in heavy type there is an error in either capitalization or punctuation. You are to decide which one of each pair has the correct capitalization and punctuation. Then mark the answer space at the right that has the same number as the correct form.

EXAMPLES: This is 1 mr. Jones. 1 2
2 Mr. Jones. 3 4
3 St. Louis, Missouri 5 6
4 St. Louis Missouri 7 8

A MUSICAL PROGRAM

We heard 1 beethoven's 1 2
2 Beethoven's. 3 4
"sixth Symphony"
"Sixth Symphony" on the Symphony Hour... 5 6
Featured instruments were:
5 The strings 7 8
6 the Strings 9 10
1 Flutes and other Woodwinds 11 12
2 Flutes and other woodwinds 13 14
This symphony," the announcer said,
"describes 15 16
"Describes a storm." 17 18

A GOOD PLAY

In our play my friend 5 Sam, acted the part 5 6
of Rip Van Winkle. 6 Sam 7 8
"I'll 9 10
I'll get enough sleep for once," he said. 11 12
Our play was 3 good some 13 14
4 good. Some 15 16
People wanted to see it 5 again. 17 18
6 again, 19 20

For the answer, turn to the third 1 chapter. 1 2
2 Chapter. 3 4
Freedom of speech was a 3 jeffersonian ideal. 5 6
4 Jeffersonian ideal. 7 8
Both 5 Democrats, 9 10
6 Democrats and Republicans approved. 11 12
This notebook represents two 1 months' 13 14
2 month's work. 15 16
We had a heavy 3 storm, 17 18
4 storm; an inch of rain fell. 19 20
The storm struck 5 suddenly, 21 22
6 suddenly," our paper 23 24
reported. 25 26
We have 1 arithmetic 27 28
2 Arithmetic and English every day. 29 30
The president, it 3 seems 31 32
4 seems, has called a meeting. 33 34

DIRECTIONS: Decide whether each of the sentences below is *simple* (only one thought), *compound* (two independent clauses), or *complex* (one clause subordinate to another). Mark the answer space under S if the sentence is simple, CD if it is compound, and CX if it is complex. Mark only the one that tells what form the sentence is.

Our school offers a course in printing. S CD 18
My cousin and I are taking it now. S CD 19
My cousin got a B, and I got an A. S CD 20
Orville Wright and his brother Wilbur built S CD
the first successful airplane. 21
Before 1920, people did not have radio sets. S CX 22
Before radio became popular, children read S CX
more books. 23
Pioneer women made soap from fat which S CX
they had saved. 24
One kind of palm tree from which many use- S CX
ful products are obtained is the coconut 25
palm.

DIRECTIONS: If the word in heavy type is the subject of the sentence, mark the answer space under S. If it is the verb, mark the answer space under V.

This *land* has been plowed. S V 26
That plane will soon *land*. S V 27
For these men, *working* brought its reward. S V 28
These men are *working* to finish their job. S V 29
Where does that *light* come from? S V 30
Light streamed in the windows. S V 31

TEST 4 *Language* (Continued)← 10^a← 10^b

DIRECTIONS: In each sentence, decide which of the numbered words is correct. Then mark the answer space at the right which has the same number as the word you have chosen.

Bob and ¹ I ₂ me painted the scenery.....	1	2	32
He ³ doesn't ₄ don't watch where he's going.....	3	4	33
Where ⁵ are ₆ is my books?.....	5	6	34
Our team will win this game ¹ easy. ₂ easily.....	1	2	35
Each of us ³ ought ₄ had ought to work faster.....	3	4	36
Is this the ⁵ right ₆ write road?.....	5	6	37
Nancy can certainly read ¹ good. ₂ well.....	1	2	38
I might ³ of ₄ have gone if I'd been asked.....	3	4	39
Take a picture of Helen and ⁵ I. ₆ me.....	5	6	40
Some of us were ¹ lying ₂ laying on the ground.....	1	2	41
³ Whose ₄ Who's sweater is this?.....	3	4	42
The girls have all ⁵ run ₆ ran away.....	5	6	43
Tell me when ¹ your ₂ you're ready.....	1	2	44
Miss Martin is ³ too ₄ to busy to see us.....	3	4	45
The dog is looking for ⁵ it's ₆ its master.....	5	6	46
Have you ¹ drank ₂ drunk your milk?.....	1	2	47
My kitten was ³ drowned. ₄ drowneded.....	3	4	48
Last ⁵ weak ₆ week they took a trip.....	5	6	49
The baby had ¹ fell ₂ fallen downstairs.....	1	2	50
Most people like to eat ³ regular. ₄ regularly.....	3	4	51

Both the cat and the dog ⁵ have ₆ has fleas.....	5	6	5
We are ¹ all ready ₂ already late.....	1	2	5
I ³ can ₄ can't hardly wait to see him.....	3	4	5
Everybody wants ⁵ his ₆ their own coat.....	5	6	5
The birds had all ¹ flew ₂ flown South.....	1	2	5
A girl ³ who ₄ which giggles is a nuisance.....	3	4	5
They fought a ⁵ strange ₆ funny battle.....	5	6	5
It was cold in the house ¹ with ₂ without no heat...	1	2	5
The captain ³ led ₄ lead his men to victory.....	3	4	6
A boy ⁵ who ₆ whom I knew got lost.....	5	6	6
Have you ever ¹ shook ₂ shaken apples from a tree?	1	2	6
We've driven ³ all the farther ₄ as far as we can.....	3	4	6
Treat me ⁵ as if I were ₆ like I was your sister.....	5	6	6
The ship ¹ sank ₂ sunk before help could reach it...	1	2	6
Do you like ³ whip ₄ whipped cream?.....	3	4	6
There are ⁵ less ₆ fewer boys than girls here.....	5	6	6
This picture is the ¹ better ₂ best of the two.....	1	2	6
The explosion had ³ burst ₄ bursted open the door...	3	4	6
I ⁵ reckon ₆ suppose they will serve refreshments.....	5	6	7
A bellhop is ¹ where a boy ₂ a boy who carries baggage...	1	2	7
Here ³ come ₄ comes your sister and my brother...	3	4	7
At the corner I stopped very ⁵ sudden. ₆ suddenly.....	5	6	7
Does your statement ¹ infer ₂ imply that he did it?	1	2	7

Stop.

No. right () × 2 ()

No. omitted or double-marked ()

Sum ()

Subtract 74

DIFFERENCE (R-W)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Gr. score	19	22	25	28	30	33	35	37	39	41	43	45	47	49	50	52	54	56	58	60	62	63	65	66	67	69	70	72	73	74	75	76	78	79	80	82	84	85	86	88
DIFFERENCE (R-W) (Cont'd)	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70										
Gr. score	90	93	96	99	101	104	107	108	109	110	111	112	113	114	115	116	117	118	119	119	120	121	122	123	123	124	124	124	125	125	126									

DIFFERENCE -----

DIRECTIONS: Work an example, and then compare your answer with the answers which follow it. If your answer is one of those given, mark the answer space that has the same letter as your answer. Sometimes the correct answer is not given. If you do not find the correct answer, mark the space under the letter for **not given**.

SAMPLES: ⁵¹ How many balls are 3 balls and 4 balls?

a 3 b 4 c 7 d 12 e not given.....⁵¹ a b c d e

⁵² How many books are 3 books and 2 books?

f 2 g 3 h 4 i 6 j not given.....⁵² f g h i j

¹ Judy has 16 jacks and Hazel has 9. How many more jacks has Judy than Hazel? a b c d e
a 7 b 9 c 16 d 25 not given.....¹ a b c d e

² Mother bakes 24 rolls at a time. How many pans will she need if she bakes 6 in a pan? f g h i j
f 4 g 18 h 24 i 30 j not given.....² f g h i j

³ A strip of paper 19 inches long is to be cut so that one piece will be a foot long. How long will the other piece be? a b c d e
a 5 in. b 12 in. c 19 in. d 31 in. e not given.....³ a b c d e

⁴ A cake costs 73 cents. How much change will Mother get back if she gives the baker two half dollars? f g h i j
f 23¢ g 27¢ h 37¢ i \$1.00 j not given.....⁴ f g h i j

⁵ A lock for the clubhouse will cost \$1.35. What will be each boy's share if 9 boys share equally? a b c d e
a 9¢ b 14¢ c 15¢ d \$12.15 e not given.....⁵ a b c d e

⁶ Ruth weighs 78 pounds, Helen weighs 54, and Ann weighs 67. How many pounds will Ann have to gain to weigh as much as Ruth? f g h i j
f 11 g 13 h 24 i 78 j not given.....⁶ f g h i j

⁷ Ann bought 6 yards of ribbon to tie two packages. For one package she used 3 yards and 2 feet. How much ribbon was left for the other package? a b c d e
a 3 yd. b 3 yd. 1 ft. c 3 yd. 2 ft. d 9 yd. 2 ft. e not given.....⁷ a b c d e

⁸ You know how much a man is paid per hour. You know how many hours he worked in a week. To find his earnings for the week, what would you do? f g h i j
f add g subtract h multiply i divide j not given.....⁸ f g h i j

⁹ How much would Steve get in all for selling 11 papers at 7¢ each and 3 magazines at 20¢ each? a b c d e
a 27¢ b 77¢ c \$1.27 d \$1.37 e not given.....⁹ a b c d e

¹⁰ Each class in a school agreed to collect $\frac{1}{6}$ of 300 cans of food for Thanksgiving baskets. How many cans would each class have to collect? f g h i j
f 50 g 60 h 180 i 240 j not given.....¹⁰ f g h i j

¹¹ Tom runs errands for 15¢ each. If he averages 15 errands a month, what is his monthly income? a b c d e
a 15¢ b 30¢ c \$1.50 d \$2.25 e not given.....¹¹ a b c d e

¹² The heights of five boys are 60 inches, 67 inches, 66 inches, 62 inches, and 60 inches. If they lined up according to height, how tall would the middle boy be? f g h i j
f 60 in. g 62 in. h 63 in. i 66 in. j not given.....¹² f g h i j

¹³ Candy eggs are 2 for 5¢. How many can be bought for 50¢? a b c d e
a 10 b 20 c 25 d 30 e not given.....¹³ a b c d e

¹⁴ For a picnic, a class bought 4 dozen buns at 22¢ a dozen and 3 packages of marshmallows at 32¢ a package. How much did the buns and marshmallows cost all together? f g h i j
f 88¢ g 96¢ h \$1.74 i \$1.84 j not given.....¹⁴ f g h i j

TEST 5 *Arithmetic Reasoning* (Continued)

12

- 15 When the Smiths go to the movies, Jane takes care of their baby and earns 50¢ an hour. How much should she receive for staying one evening from 7 P.M. to 10:30 P.M.?
 a 50¢ b \$1.50 c \$1.75 d \$2.50 e not given .15
- 16 A pancake recipe for 6 persons calls for $2\frac{1}{2}$ cups of pancake mix. How many cups will it take for 3 persons?
 f $1\frac{1}{4}$ g $1\frac{1}{2}$ h $2\frac{1}{2}$ i $3\frac{3}{4}$ j not given .16
- 17 Bill jumped 13 feet 5 inches on Tuesday. On Thursday he jumped 11 feet 9 inches. How much farther did he jump on Tuesday than on Thursday?
 a 1 ft. 2 in. b 1 ft. 4 in. c 1 ft. 6 in. d 2 ft. 4 in. e not given .17
- 18 A Scout troop bought 24 uniforms for \$194.40. What was the cost per uniform?
 f \$8.10 g \$8.95 h \$9.92 i \$9.95 j not given .18
- 19 Pine City is 120 miles from Milton. To go from Pine City to Milton by bus takes 4 hours and by train only $2\frac{3}{4}$ hours. How many hours less does it take to go by train?
 a $1\frac{1}{4}$ b $1\frac{3}{4}$ c $2\frac{1}{4}$ d $6\frac{3}{4}$ e not given .19
- 20 How many 1-inch by 2-inch pieces of candy can be cut in a pan which is 8 inches by 10 inches?
 f 20 g 36 h 50 i 80 j not given .20
- 21 Dan says there are 2 quart and 2 pint packages of ice cream for the party. How many people will all of it serve if a pint serves 4 people?
 a 4 b 12 c 16 d 24 e not given .21
- 22 A scale drawing reads "1 inch = 12 inches." A line $3\frac{1}{4}$ inches long on this drawing represents how many actual inches?
 f 12 g $15\frac{1}{4}$ h 27 i 39 j not given .22
- 23 The butcher says to cook a turkey 20 minutes for each pound. At what hour should a 15-pound turkey be started in order to be done at 12 o'clock noon?
 a 6 A.M. b 8 A.M. c 9 A.M. d 10 A.M. e not given .23
- 24 If campers start 2000 forest fires each year and tobacco smokers start 5000, how many times as many fires are started by tobacco smokers as by campers?
 f $\frac{2}{5}$ g $2\frac{1}{2}$ h 5 i 10 j not given .24
- 25 George wants to buy a board to saw into 8 pieces $1\frac{3}{4}$ feet long. If he ignores the waste in sawing, how long will the board have to be?
 a $9\frac{3}{4}$ ft. b 14 ft. c 16 ft. d 56 ft. e not given .25
- 26 Mr. Wilson is going to buy 60 pounds of mixed grass seed. He says the mixture should be 1 part clover, 2 parts bluegrass, and 3 parts rye. How many pounds of the mixture will be bluegrass seed?
 f 6 g 10 h 20 i 30 j not given .26
- 27 A club has an income of \$50. Of this, \$20 is budgeted for food. What per cent does the club budget for food?
 a 10 b 20 c 25 d 40 e not given .27
- 28 If the sales tax is 3%, what is the tax, to the nearest cent, on a coat which costs \$27.60?
 f 81¢ g 83¢ h 84¢ i 92¢ j not given .28
- 29 If a man earns \$80 in a week and has deductions of 1% for unemployment insurance, $1\frac{1}{2}\%$ for old-age security, and \$12 for income tax, how much does he have left?
 a \$65.50 b \$66 c \$67.80 d \$67.97 e not given .29
- 30 The speed of sound is about 1100 feet per second. Bob sees lightning and then hears it thunder 20 seconds later. To the nearest mile, how many miles away was the lightning?
 f 4 g 6 h 8 i 10 j not given .30

TEST 5 *Arithmetic Reasoning* PART II

◀ 13

DIRECTIONS: The answer to each of these examples can be thought out without doing any figuring on paper. You are to think out the answer and mark the answer space that is lettered the same as your choice.

- 31 Without working the examples, choose the one in which the quotient will be largest.
 $a \ 19 \overline{)938}$ $b \ 19 \overline{)940}$ $c \ 19 \overline{)934}$ $d \ 19 \overline{)937}$ 31
- 32 In which number is the 8 in the hundreds position?
 $e \ 1089$ $f \ 1980$ $g \ 9801$ $h \ 1908$ 32
- 33 Which is the smallest fraction?
 $a \ \frac{1}{10}$ $b \ \frac{1}{50}$ $c \ \frac{1}{100}$ $d \ \frac{1}{5}$ 33
- 34 Without measuring, tell how many inches long this line is. _____
 $e \ 1$ $f \ 2$ $g \ 3$ $h \ 4$ 34
- 35 How much is 19.7 rounded off to the nearest whole number?
 $a \ 19$ $b \ 19 \frac{7}{10}$ $c \ 20$ $d \ 197$ 35
- 36 A loan which has real estate to guarantee its payment is —
 $e \text{ interest}$ $f \text{ stock}$ $g \text{ capital}$ $h \text{ a mortgage}$ 36
- 37 A kind of insurance which protects against lawsuits for damage is —
 $a \text{ annuity}$ $b \text{ liability}$ $c \text{ theft}$ $d \text{ marine}$ 37
- 38 By estimation, choose the example which will have the smallest product.
 $e \ 806$ $f \ 8.06$ $g \ 80.6$ $h \ 8.06$
 $\underline{4.50}$ $\underline{45.0}$ $\underline{4.50}$ $\underline{4.50}$ 38
- 39 $\sqrt{64} =$ $a \ 8$ $b \ 32$ $c \ 64$ $d \ 4096$ 39
- 40 How much is 150% of 20?
 $e \ 3$ $f \ 7.5$ $g \ 30$ $h \ 75$ 40
- 41 Which line is horizontal?
 $a \ \left| \right.$ $b \ \diagup$ $c \ \diagdown$ $d \ ______$ 41
- 42 If b is the base of a triangle and a is its altitude, the area of the triangle is —
 $e \ \frac{1}{2} ab$ $f \ ab$ $g \ a + b$ $h \ 2 ab$ 42
- 43 17.5% is equal to the decimal —
 $a \ .175$ $b \ 1.75$ $c \ 17.05$ $d \ 17.50$ 43
- 44 By estimation, choose the example whose quotient will be smaller than 1.
 $e \ 126 \overline{)127}$ $f \ 138 \overline{)137.2}$ $g \ 156.3 \overline{)157}$ $h \ 125 \overline{)125}$ 44
- 45 Which is the same as "4 less than 5 times a number = 21"?
 $a \ 4 - 5 = 21 N$ $b \ \frac{5N}{4} = 21$ $c \ 21 \times 5 - 4 = N$
 $d \ 5N - 4 = 21$ 45

Stop.

No. RIGHT	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
Gr. score	23	26	29	31	33	36	38	40	42	44	46	48	50	52	54	56	58	60	61	63	65	67	69	71	73	75	77	79	81	84	86	89	92	95	98	101	104	107	110	113	117	120	123	127	129

TEST 6 Arithmetic Computation

Stanford Advanced Partial: J

← 14

DIRECTIONS: Work each example. Then compare your answer with the answers given at the right of the example. If your answer is one of those given, mark the answer space that has the same letter as your answer. Sometimes the correct answer is not given. If the correct answer is not given, mark the answer space under the letter for not given. Look carefully at each example to see what it tells you to do. If you need to do any figuring, use a separate sheet of paper.

1 Multiply	$\begin{array}{r} 450 \\ 7 \end{array}$	a 3050	b 3100	c 3150	d 3157	e not given . . . 1	a	b	c	d	e
2 Add	$\begin{array}{r} \$4.80 \\ 9.65 \end{array}$	f \$13.45	g \$13.55	h \$14.55	i \$15.45	j not given . . . 2	f	g	h	i	j
3 Subtract	$\begin{array}{r} \$5.00 \\ 4.48 \end{array}$	a \$.52	b \$.62	c \$1.48	d \$1.52	e not given . . . 3	a	b	c	d	e
4	$43 \overline{)86}$	f 2	g 3	h 11	i 20	j not given 4	f	g	h	i	j
5 Add	$\begin{array}{r} 854 \\ 759 \\ 47 \\ 36 \end{array}$	a 1686	b 1696	c 1706	d 1796	e not given 5	a	b	c	d	e
6 Multiply	$\begin{array}{r} 75 \\ 14 \end{array}$	f 89	g 1010	h 1040	i 10,520	j not given 6	f	g	h	i	j
7 Subtract	$\begin{array}{r} 871,653 \\ 396,785 \end{array}$	a 474,868	b 475,868	c 484,968	d 485,868	e not given 7	a	b	c	d	e
8	$34 \overline{)748}$	f $19 \frac{2}{34}$	g 22	h $24 \frac{15}{17}$	i 112	j not given 8	f	g	h	i	j
9 Multiply	$\begin{array}{r} 310 \\ 203 \end{array}$	a 613	b 7130	c 62,930	d 64,960	e not given . . . 9	a	b	c	d	e
10 Subtract	$\begin{array}{r} 8 \frac{1}{10} \\ 7 \frac{5}{6} \end{array}$	f $1 \frac{4}{15}$	g $1 \frac{7}{10}$	h $1 \frac{14}{15}$	i $15 \frac{14}{15}$	j not given 10	f	g	h	i	j
11 Add	$\frac{1}{6} + \frac{1}{6}$	a $\frac{1}{12}$	b $\frac{1}{3}$	c 1	d 2	e not given 11	a	b	c	d	e
12	$\frac{1}{4} \times \frac{3}{4} =$	f $\frac{1}{4}$	g $\frac{1}{3}$	h $\frac{3}{8}$	i $\frac{3}{4}$	j not given 12	f	g	h	i	j
13	$6 \div \frac{2}{5} =$	a $\frac{1}{15}$	b $\frac{3}{5}$	c 3	d 15	e not given 13	a	b	c	d	e
14	4% of \$800 =	f \$32	g \$200	h \$320	i \$804	j not given 14	f	g	h	i	j
15 Add	$\begin{array}{r} \frac{3}{4} \\ \frac{1}{3} \\ 2 \frac{1}{2} \end{array}$	a $2 \frac{1}{6}$	b $2 \frac{5}{12}$	c $3 \frac{1}{6}$	d $3 \frac{1}{2}$	e not given 15	a	b	c	d	e

16 $.2 \times .12 =$ *f* .024 *g* .06 *h* .6 *i* 24 *j* not given..... *f* *g* *h* *i* *j*

17 Add $\begin{array}{r} 4474.59 \\ 7668.98 \\ 90.67 \\ \hline 698.56 \end{array}$ *a* 12,022.80 *b* 12,822.90 *c* 12,931.80 *d* 12,932.80 *e* not given..... *a* *b* *c* *d* *e*

18 $6\overline{)5424}$ *f* 84 *g* 94 *h* 904 *i* 940 *j* not given..... *f* *g* *h* *i* *j*

19 Selling Price = \$250 *a* \$10 *b* \$100 *c* \$240 *d* \$254
Rate of Commission = 4% *e* not given..... *a* *b* *c* *d* *e*
Commission = ?

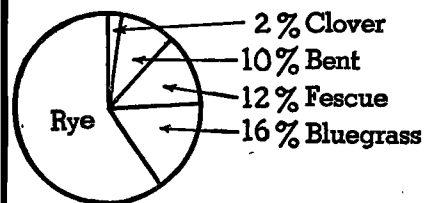
20 $8\overline{)16}$ *f* .002 *g* .2 *h* 2 *i* 20 *j* not given..... *f* *g* *h* *i* *j*

21 Subtract $\begin{array}{r} 3\frac{2}{3} \\ 3\frac{1}{5} \\ \hline \end{array}$ *a* 0 *b* $\frac{1}{3}$ *c* $\frac{7}{15}$ *d* $6\frac{13}{15}$ *e* not given..... *a* *b* *c* *d* *e*

22 $4\frac{2}{3} \times 3\frac{3}{4} =$ *f* $7\frac{1}{2}$ *g* 12 *h* $12\frac{1}{2}$ *i* 15 *j* not given..... *f* *g* *h* *i* *j*

23 If $d + 5 = 15$, $d =$ *a* 3 *b* 10 *c* 20 *d* 75 *e* not given..... *a* *b* *c* *d* *e*

24 $\frac{5}{8} \div \frac{3}{10} =$ *f* $\frac{3}{16}$ *g* $\frac{4}{9}$ *h* $\frac{12}{25}$ *i* $2\frac{1}{12}$ *j* not given..... *f* *g* *h* *i* *j*



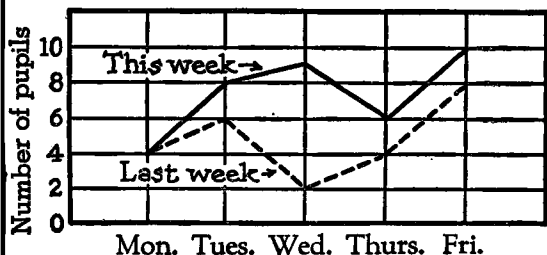
25 What per cent of the grass seed is rye?
a 38% *b* 40% *c* 60% *d* 62%
e not given..... *a* *b* *c* *d* *e*

26 How many times as much bluegrass is there as clover?
f 2 *g* 8 *h* 16 *i* 18 *j* not given..... *f* *g* *h* *i* *j*

27 Subtract $\begin{array}{r} 11 \text{ ft. } 4 \text{ in.} \\ 8 \text{ ft. } 8 \text{ in.} \\ \hline \end{array}$ *a* 2 ft. 6 in. *b* 2 ft. 8 in. *c* 3 ft. 4 in. *d* 20 ft. 0 in. *e* not given..... *a* *b* *c* *d* *e*

28 Add $\begin{array}{r} 4 \text{ hr. } 27 \text{ min.} \\ 4 \text{ hr. } 36 \text{ min.} \\ 3 \text{ hr. } 38 \text{ min.} \\ \hline \end{array}$ *f* 11 hr. 41 min. *g* 12 hr. 1 min. *h* 12 hr. 31 min. *i* 12 hr. 51 min. *j* not given..... *f* *g* *h* *i* *j*

NUMBER OF PUPILS ABSENT DURING A TWO-WEEK PERIOD



29 On which day of these two weeks were the most pupils absent?
a Tues. *b* Wed. *c* Thurs. *d* Fri.
e not given..... *a* *b* *c* *d* *e*

30 How many more pupils were absent on Wednesday of this week than on Thursday of last week?
f 2 *g* 5 *h* 6 *i* 9 *j* not given..... *f* *g* *h* *i* *j*

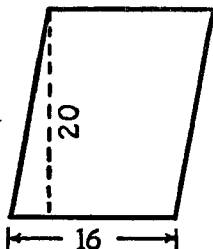
31 Find the average $\begin{array}{r} 16 \text{ ft.} \\ 32 \text{ ft.} \\ 12 \text{ ft.} \\ \hline \end{array}$ *a* 12 ft. *b* $12\frac{1}{2}$ ft. *c* 16 ft. *d* 20 ft. *e* not given..... *a* *b* *c* *d* *e*

TEST 6 *Arithmetic Computation* (Continued)

← 16

32 $4\overline{)3}$ $f .075$ $g \frac{3}{4}$ $h .75$ $i 7.5$ j not given.....32 f g h i

33 Add $21 \text{ m. } 66 \text{ cm.}$ $a 53 \text{ m. } 38 \text{ cm.}$ $b 54 \text{ m. } 38 \text{ cm.}$ $c 65 \text{ m. } 8 \text{ cm.}$ a b c d
 $32 \text{ m. } 72 \text{ cm.}$ $d 66 \text{ m. } 8 \text{ cm.}$ e not given.....33 f g h i



34 If $A = bh$, what is the area of the parallelogram shown at the left? f g h i
 $f 32$ $g 36$ $h 160$ $i 1620$ j not given.....34 f g h i

35 If 10% of an amount is 25¢, what is the amount? a b c d
 $a 2.5¢$ $b 25¢$ $c 40¢$ $d \$2.50$ e not given.....35 f g h i

36 $\frac{2}{6} = \frac{1}{?}$ $f 3$ $g 5$ $h 7$ $i 12$ j not given.....36 f g h i

37 If $5r + 2 = 37$, $r =$ $a 5$ $b 7$ $c 30$ $d 35$ e not given.....37 a b c d

38 Assessed Valuation = \$2000
 Tax Rate per \$100 = \$4.50
 Amount of Tax = ? $f \$9$ $g \$15.50$ $h \$90$ $i \$2450$ j not given...38 f g h i

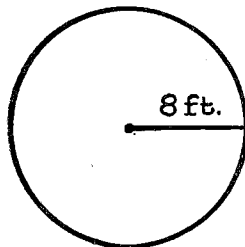
39 $\frac{-24}{-3} =$ $a -24$ $b -8$ $c 8$ $d 21$ e not given.....39 a b c d

40 Multiply $-3y$
 -4 $f 12y$ $g -12y$ $h 12$ $i -12$ j not given....40 f g h i

41 Principal = \$400
 Annual Interest = \$20
 Rate of Interest = ? $a .4\%$ $b 2\%$ $c 5\%$ $d 40\%$ e not given 41 a b c d

42 If $\frac{B}{2} = 16$, $B =$ $f 14$ $g 16$ $h 18$ $i 32$ j not given.....42 f g h i

43 Principal = \$400
 Rate = 3%
 Time = 9 mo.
 Interest = ? $a \$1.33$ $b \$9$ $c \$12$ $d \$108$ e not given.....43 a b c d



44 If $A = \pi r^2$, what is the area of the circle shown at the left?
 ($\pi = 3.14$) $f 24.12 \text{ sq. ft.}$ $g 50.24 \text{ sq. ft.}$ $h 198.24 \text{ sq. ft.}$ f g h i
 $i 200.96 \text{ sq. ft.}$ j not given.....44 f g h i

Stop

No. right	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44
Gr. score	21	28	31	33	35	38	40	43	45	47	49	51	53	55	57	59	61	62	64	66	67	69	70	72	74	76	78	79	81	84	86	89	92	96	100	104	107	111	114	117	120	123	126	129

1. The first part of the text discusses the importance of understanding the context of a document. It emphasizes that without proper context, the meaning of the text can be lost or misinterpreted. This is particularly true for historical documents, where the social and cultural background is crucial for accurate interpretation.

2. The second part of the text focuses on the role of the reader in the interpretation process. It argues that the reader's own experiences and knowledge play a significant role in how they understand the text. This suggests that interpretation is not a purely objective process, but one that is influenced by the reader's perspective.

3. The third part of the text explores the relationship between the text and the reader. It discusses how the text can be seen as a tool for communication, and how the reader's role is to engage with that communication. This involves not only understanding the words on the page, but also understanding the intentions of the author and the broader context in which the text was written.

4. The final part of the text concludes by emphasizing the importance of critical thinking in the interpretation of texts. It encourages readers to question the text, to look for evidence, and to consider different perspectives. This is essential for developing a deep and nuanced understanding of any document.

[illegible]

[illegible]This image shows a blank page from a document. The page is mostly white with some minor scanning artifacts. There are prominent dark vertical bands along the left and right edges, likely due to the binding or the scanner's field of view. A few small, dark specks are visible on the page surface.

1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.



PARENT	NAME	DATE	TIME	LOCATION	REMARKS
MOTHER	WILLIAM	10-10-68	10:00	1000	
FATHER	WILLIAM	10-10-68	10:00	1000	
S/S/STUD	WILLIAM	10-10-68	10:00	1000	
S/S/STUD	WILLIAM	10-10-68	10:00	1000	
OTHER	WILLIAM	10-10-68	10:00	1000	
OTHER	WILLIAM	10-10-68	10:00	1000	

Figure 1. A schematic diagram of the experimental setup. The subject is seated in a chair, viewing a screen. The screen displays a target (a small circle) and a starting point (a larger circle). The subject's hand is positioned at the starting point. The distance between the starting point and the target is labeled as 'Distance'. The angle between the horizontal line and the line connecting the starting point to the target is labeled as 'Angle'.

[illegible]

THE UNIVERSITY OF CHICAGO

1. COMBUSTION (RELATION TO AIR/FUEL RATIO) HIGH FLAME LOW FLAME

1. NAME _____

CLARK BARNES

7. DATE 04/20/2018 FILE NO. 18-0374

Y, SAHARA STATION, W. HED. SINGAPORE, DIVISION SE AGATED. 1960-7

bioRxiv preprint doi: <https://doi.org/10.1101/000000>; this version posted January 1, 2016. The copyright holder for this preprint (which was not certified by peer review) is the author/funder, who has granted bioRxiv a license to display the preprint in perpetuity. It is made available under aCC-BY-NC-ND 4.0 International license.

[illegible][illegible]

7-00000 OF 18 PAGES: 6-11-68

1971-1972

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 84

^a Values are means ± SD.

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13. 14. 15. 16. 17. 18. 19. 20. 21. 22. 23. 24. 25. 26. 27. 28. 29. 30. 31. 32. 33. 34. 35. 36. 37. 38. 39. 40. 41. 42. 43. 44. 45. 46. 47. 48. 49. 50. 51. 52. 53. 54. 55. 56. 57. 58. 59. 60. 61. 62. 63. 64. 65. 66. 67. 68. 69. 70. 71. 72. 73. 74. 75. 76. 77. 78. 79. 80. 81. 82. 83. 84. 85. 86. 87. 88. 89. 90. 91. 92. 93. 94. 95. 96. 97. 98. 99. 100. 101. 102. 103. 104. 105. 106. 107. 108. 109. 110. 111. 112. 113. 114. 115. 116. 117. 118. 119. 120. 121. 122. 123. 124. 125. 126. 127. 128. 129. 130. 131. 132. 133. 134. 135. 136. 137. 138. 139. 140. 141. 142. 143. 144. 145. 146. 147. 148. 149. 150. 151. 152. 153. 154. 155. 156. 157. 158. 159. 160. 161. 162. 163. 164. 165. 166. 167. 168. 169. 170. 171. 172. 173. 174. 175. 176. 177. 178. 179. 180. 181. 182. 183. 184. 185. 186. 187. 188. 189. 190. 191. 192. 193. 194. 195. 196. 197. 198. 199. 200. 201. 202. 203. 204. 205. 206. 207. 208. 209. 210. 211. 212. 213. 214. 215. 216. 217. 218. 219. 220. 221. 222. 223. 224. 225. 226. 227. 228. 229. 230. 231. 232. 233. 234. 235. 236. 237. 238. 239. 240. 241. 242. 243. 244. 245. 246. 247. 248. 249. 250. 251. 252. 253. 254. 255. 256. 257. 258. 259. 260. 261. 262. 263. 264. 265. 266. 267. 268. 269. 270. 271. 272. 273. 274. 275. 276. 277. 278. 279. 280. 281. 282. 283. 284. 285. 286. 287. 288. 289. 290. 291. 292. 293. 294. 295. 296. 297. 298. 299. 300. 301. 302. 303. 304. 305. 306. 307. 308. 309. 310. 311. 312. 313. 314. 315. 316. 317. 318. 319. 320. 321. 322. 323. 324. 325. 326. 327. 328. 329. 330. 331. 332. 333. 334. 335. 336. 337. 338. 339. 340. 341. 342. 343. 344. 345. 346. 347. 348. 349. 350. 351. 352. 353. 354. 355. 356. 357. 358. 359. 360. 361. 362. 363. 364. 365. 366. 367. 368. 369. 370. 371. 372. 373. 374. 375. 376. 377. 378. 379. 380. 381. 382. 383. 384. 385. 386. 387. 388. 389. 390. 391. 392. 393. 394. 395. 396. 397. 398. 399. 400. 401. 402. 403. 404. 405. 406. 407. 408. 409. 410. 411. 412. 413. 414. 415. 416. 417. 418. 419. 420. 421. 422. 423. 424. 425. 426. 427. 428. 429. 430. 431. 432. 433. 434. 435. 436. 437. 438. 439. 440. 441. 442. 443. 444. 445. 446. 447. 448. 449. 450. 451. 452. 453. 454. 455. 456. 457. 458. 459. 460. 461. 462. 463. 464. 465. 466. 467. 468. 469. 470. 471. 472. 473. 474. 475. 476. 477. 478. 479. 480. 481. 482. 483. 484. 485. 486. 487. 488. 489. 490. 491. 492. 493. 494. 495. 496. 497. 498. 499. 500. 501. 502. 503. 504. 505. 506. 507. 508. 509. 510. 511. 512. 513. 514. 515. 516. 517. 518. 519. 520. 521. 522. 523. 524. 525. 526. 527. 528. 529. 530. 531. 532. 533. 534. 535. 536. 537. 538. 539. 540. 541. 542. 543. 544. 545. 546. 547. 548. 549. 550. 551. 552. 553. 554. 555. 556. 557. 558. 559. 560. 561. 562. 563. 564. 565. 566. 567. 568. 569. 570. 571. 572. 573. 574. 575. 576. 577. 578. 579. 580. 581. 582. 583. 584. 585. 586. 587. 588. 589. 590. 591. 592. 593. 594. 595. 596. 597. 598. 599. 600. 601. 602. 603. 604. 605. 606. 607. 608. 609. 610. 611. 612. 613. 614. 615. 616. 617. 618. 619. 620. 621. 622. 623. 624. 625. 626. 627. 628. 629. 630. 631. 632. 633. 634. 635. 636. 637. 638. 639. 640. 641. 642. 643. 644. 645. 646. 647. 648. 649. 650. 651. 652. 653. 654. 655. 656. 657. 658. 659. 660. 661. 662. 663. 664. 665. 666. 667. 668. 669. 670. 671. 672. 673. 674. 675. 676. 677. 678. 679. 680. 681. 682. 683. 684. 685. 686. 687. 688. 689. 690. 691. 692. 693. 694. 695. 696. 697. 698. 699. 700. 701. 702. 703. 704. 705. 706. 707. 708. 709. 710. 711. 712. 713. 714. 715. 716. 717. 718. 719. 720. 721. 722. 723. 724. 725. 726. 727. 728. 729. 730. 731. 732. 733. 734. 735. 736. 737. 738. 739. 740. 741. 742. 743. 744. 745. 746. 747. 748. 749. 750. 751. 752. 753. 754. 755. 756. 757. 758. 759. 760. 761. 762. 763. 764. 765. 766. 767. 768. 769. 770. 771. 772. 773. 774. 775. 776. 777. 778. 779. 780. 781. 782. 783. 784. 785. 786. 787. 788. 789. 790. 791. 792. 793. 794. 795. 796. 797. 798. 799. 800. 801. 802. 803. 804. 805. 806. 807. 808. 809. 810. 811. 812. 813. 814. 815. 816. 817. 818. 819. 820. 821. 822. 823. 824. 825. 826. 827. 828. 829. 830. 831. 832. 833. 834. 835. 836. 837. 838. 839. 840. 84

1

1. *Chlorophyll a* and *Chlorophyll b* were determined by the method of Arar and Collins (1971) using a Shimadzu 1601 UV-Visible Spectrophotometer.

...the ...

[illegible]

